

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.

Techstacks needs to be used :

- AWS EC2
- Docker
- Docker Compose

I choosed a simple To-Do-Application made up using HTML. Then i wrote a docker file to it

```
1 FROM nginx:alpine (last pushed 2 days ago)
2 RUN rm -rf /usr/share/nginx/html/*
3 COPY index.html /usr/share/nginx/html/index.html
4 EXPOSE 80
5 CMD ["nginx", "-g", "daemon off;"]
6
```

Here i choosed to deploy my application through nginx as a reverse proxy Server, where i wrote a docker-file according to it .

I implemented and reduced the size of an image by 95% for faster deployment in the production cycle and cleaned the static content of the nginx to ensure there is no error in the production cycle and application should deploy smoothly and efficiently.

```

PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker build -t nginx-image .
[+] Building 2.9s (9/9) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 192B
=> [internal] load metadata for docker.io/library/nginx:alpine
=> [auth] library/nginx:pull token for registry-1.docker.io
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [1/3] FROM docker.io/library/nginx:alpine@sha256:b3c656d55d7ad751196f21b7fd2e8d4da9cb430e32f646adc92441b72f82b14
=> => resolve docker.io/library/nginx:alpine@sha256:b3c656d55d7ad751196f21b7fd2e8d4da9cb430e32f646adc92441b72f82b14
=> [internal] load build context
=> => transferring context: 32B
=> CACHED [2/3] RUN rm -rf /usr/share/nginx/html/*

```

```

=> => naming to docker.io/library/nginx-image:latest
=> => unpacking to docker.io/library/nginx-image:latest

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/f9e1915povkqe0q1vxb7cjitox
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
nginx-image latest 31205aa7db74 About an hour ago 79.9MB
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker run -d -p 100:80 nginx-image
8a30cbbafb9aed031d99894ce2cf207f0ede4d779679648ecc33454776b23ccb
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
8a30cbbafb9a nginx-image "/docker-entrypoint..." 7 seconds ago Up 6 seconds 0.0.0.0:100->80/tcp, [::]:100->80/tcp zealous_haslett

```

```

=> => exporting manifest list sha256:31205aa7db742a5484c9d2eef7d7e96adc39bcc56afd9e4c88208c07ec716377 0.
=> => naming to docker.io/library/nginx-image:latest 0.
=> => unpacking to docker.io/library/nginx-image:latest 0.

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/f9e1915povkqe0q1vxb7cjitox
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker images
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CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
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```

Now the image has been created layer-by-layer, now its time to deploy an image in a cluster / single-node-cluster . Docker-compose will read the docker-file first and create a cluster out of it . Before that we have to tell/ instruct docker-compose to how to do it . For that i am implementing it using yml file to define the services,image,ports and volume to specify my application stored in a cluster.

```

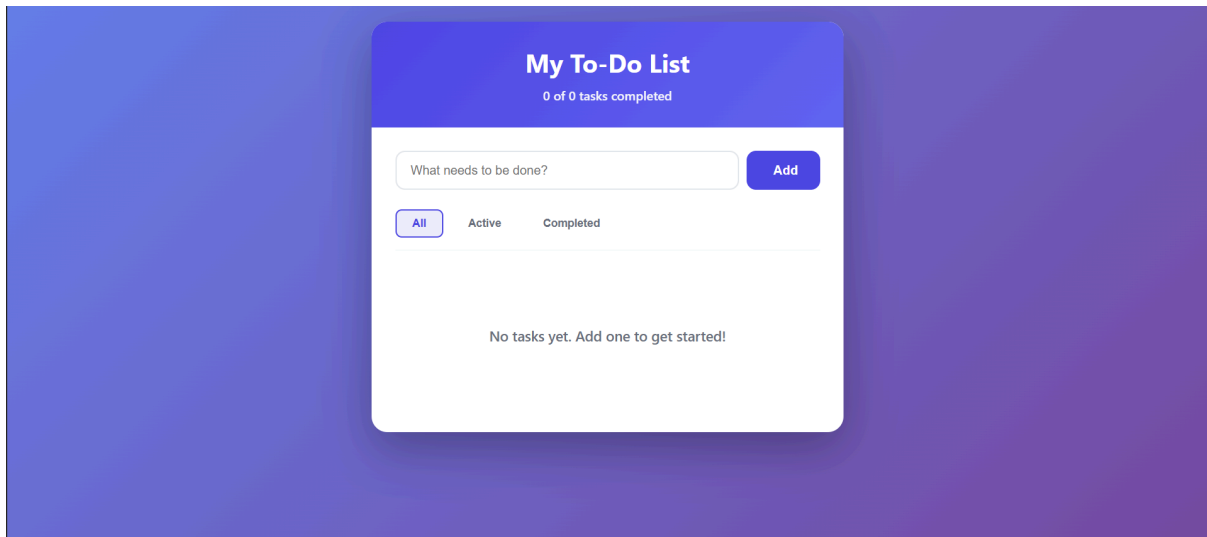
1 services:
2   web:
3     image: nginx:alpine
4     ports:
5       - 200:80
6     volumes:
7       - ./index.html:/usr/share/nginx/html/index.html:ro

```

```

PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
8a30cbbafb9a nginx-image "/docker-entrypoint..." 7 seconds ago Up 6 seconds 0.0.0.0:100->80/tcp, [::]:100->80/tcp zealous_haslett
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker compose ls
NAME STATUS CONFIG FILES
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker compose up --build -d
[+] Running 1/1
✓ web Pulled
[+] Running 1/1
✓ Container to-do-list-web-1 Started

```



Now its time to push my image in the docker-hub to make it accessible globally
To do it :

- 1) We have to tag that image first ,to particularly create a repository in a docker hub
- 2) After tagging , push the image to the created repository by specifying the username of the dockerhub

Remember before implementing this step make sure to login your docker in your terminal

```
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
nginx-image   latest    31205aa7db74   2 hours ago    79.9MB
nginx         alpine    b3c656d55d7a   4 days ago     79.8MB
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker login
Authenticating with existing credentials... [Username: sheershsinha]

Info → To login with a different account, run 'docker logout' followed by 'docker login'

Login Succeeded
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker tag nginx-image sheershsinha/dev-test
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List> docker push sheershsinha/dev-test
Using default tag: latest
The push refers to repository [docker.io/sheershsinha/dev-test]
bdabb0d44271: Mounted from sheershsinha/image-test
ff8a36d5502a: Mounted from sheershsinha/image-test
72ef17db8f42: Mounted from sheershsinha/image-test
2d35ebdb57d9: Mounted from sheershsinha/image-test
df413d6ebdc8: Mounted from sheershsinha/image-test
194fa24e147d: Mounted from sheershsinha/image-test
a9978400a692: Mounted from sheershsinha/image-test
002f62a01bca: Pushed
d9a55dab5954: Mounted from sheershsinha/image-test
3eaba6cd10a3: Mounted from sheershsinha/image-test
8f6a6833e95d: Mounted from sheershsinha/image-test
latest: digest: sha256:31205aa7db742a5484c9d2eef7d7e96adc39bcc56afd9e4c88208c07ec716377 size: 856
PS C:\Users\sheer\Documents\docker-task\docker-practice\To-Do-List>
```

