

Sprint 4

Team ID: PNT2022TMID16631

TeamMates:

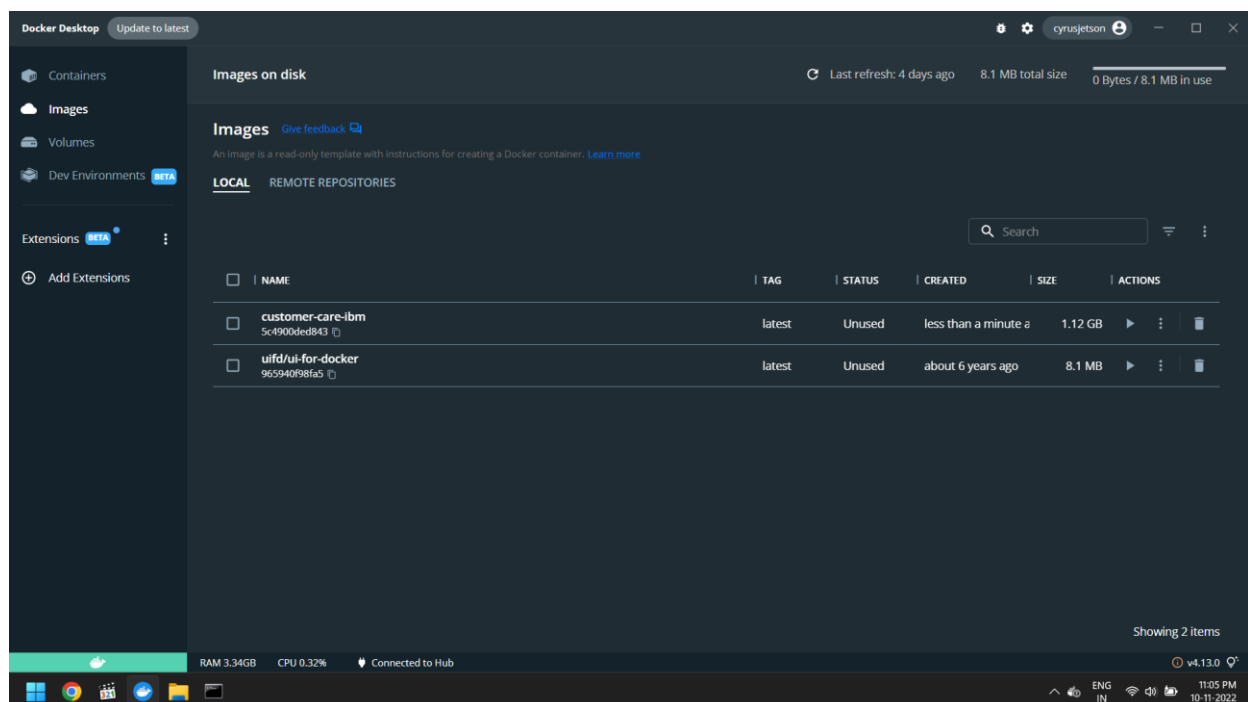
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2. KISHORE S
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4. SAKTHIVEL B
5. SRIVATSAN L

Sprint4:

1. Containerize the flask app
2. Upload in docker hub
3. Building Image
4. Pushing docker image
5. Running on Docker playground
6. Setting up container registry
7. Uploading image in container registry
8. Deploy in Docker
9. Upload Demo Video-https://youtu.be/Yi_fo4sqhQA

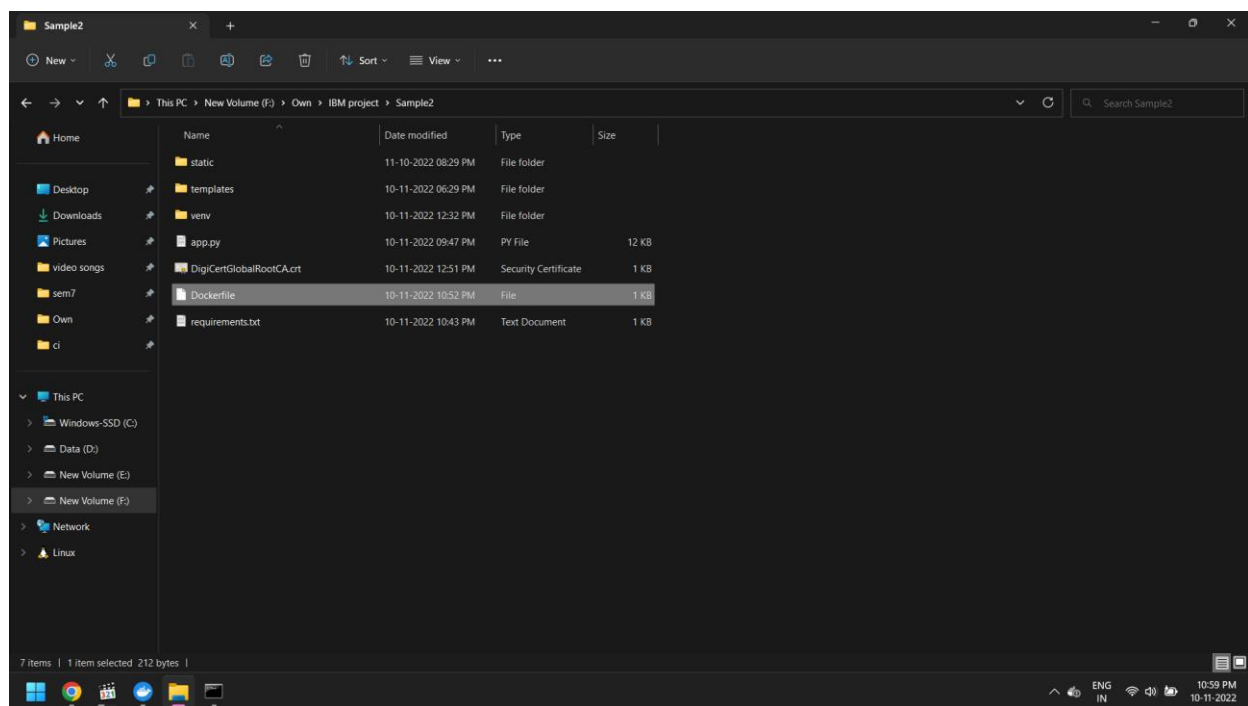
Output:

1. Containerize the app:

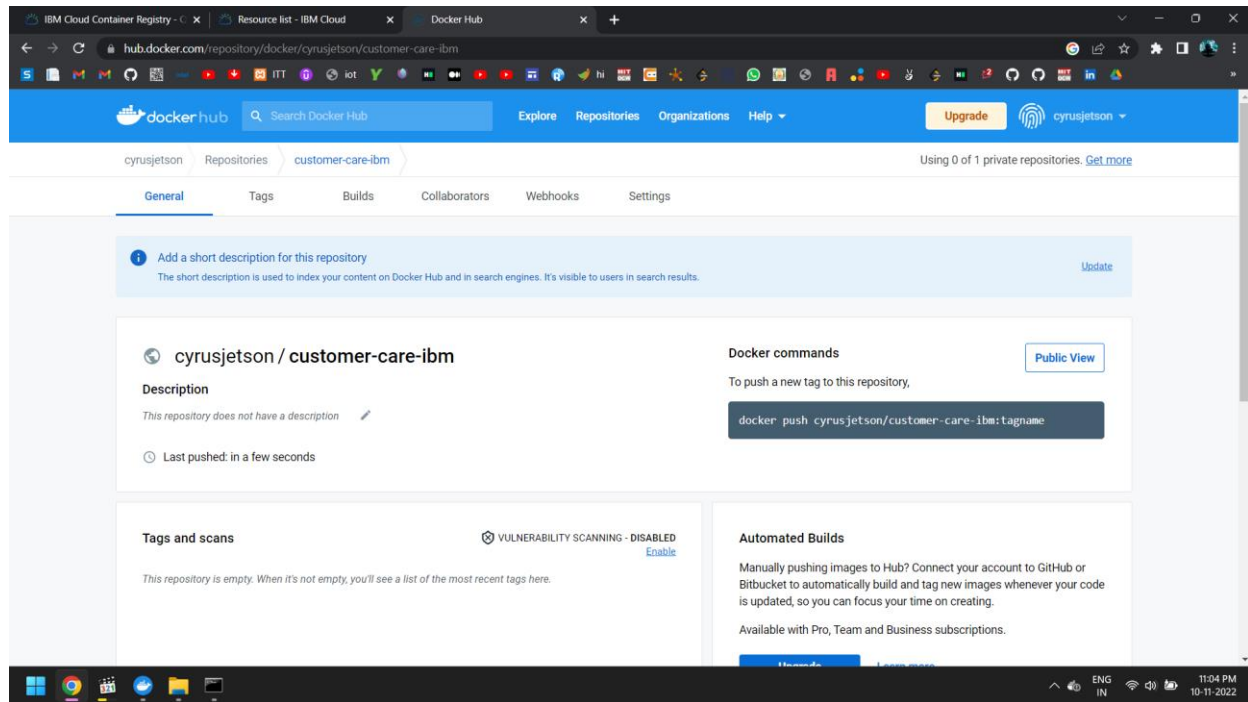


```
C:\Windows\System32\cmd.exe - docker build -t customer-care-ibm .
[auth] library/python:pull token for registry-1.docker.io 0.0s
[internal] load build context 0.5s
-> transferring context: 18.89MB 0.4s
-> CACHED [1/7] FROM docker.io/library/python:3.6$sha256:f8652afaf88c25f0d2235d547d892591067a 0.5s
-> resolve docker.io/library/python:3.6$sha256:f8652afaf88c25f0d2235d547d892591067a$4026a7fa 0.0s
-> sha256:d897a4807abec079d5ac31072359c2de510f82214c0448e926393b376d3b00d 2.22KB / 2.22KB 0.0s
-> sha256:5426848d07c5e3ad4c0e21fcb00ad0c446a27634d892006ff7137440104 0.27KB / 0.27KB 0.0s
-> sha256:9b029c73b52b07d5c07a54fb0f3e92199a206c714b53a32ae67d19231fcd 0B / 5.15MB 0.5s
-> sha256:f8652afaf88c25f0d2235d547d892591067a$4026a7fa$0019df9f300af6fc 1.86KB / 1.86KB 0.0s
-> sha256:0e2954d541cdd309201d21a73a9d1db78665c1b95b74f32b009e0677ae1e3 0B / 54.92MB 0.5s
-> sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 0B / 10.87MB 0.5s
-> CACHED [2/7] RUN apt-get update 0.0s
-> CACHED [3/7] apt-get install /app 0.0s
-> CACHED [4/7] ADD -- /app 0.0s
-> ERROR [5/7] COPY requirements.tx /app 0.0s
-----
> [5/7] COPY requirements.tx /app:
-----
failed to compute cache key: "/requirements.tx" not found: not found

F:\Own\IBM project\Sample2>docker build -t customer-care-ibm .
[*] Building 391.0s (5/12)
[internal] load build definition from Dockerfile 0.0s
-> transferring Dockerfile: 251B 0.0s
[internal] load Dockerignore 0.0s
-> transferring context: 2B 0.0s
[internal] load metadata for docker.io/library/python:3.6 1.3s
[internal] load build context 0.1s
-> transferring context: 144.79MB 0.3s
-> [1/7] FROM docker.io/library/python:3.6$sha256:f8652afaf88c25f0d2235d547d892591067a$4026a7fa$0019df9f300af6fc 389.65s
-> resolve docker.io/library/python:3.6$sha256:f8652afaf88c25f0d2235d547d892591067a$4026a7fa$0019df9f300af6fc 0.0s
-> sha256:d897a4807abec079d5ac31072359c2de510f82214c0448e926393b376d3b00d 2.22KB / 2.22KB 0.0s
-> sha256:5426848d07c5e3ad4c0e21fcb00ad0c446a27634d892006ff7137440104 0.27KB / 0.27KB 0.0s
-> sha256:9b029c73b52b07d5c07a54fb0f3e92199a206c714b53a32ae67d19231fcd 0.15MB / 5.15MB 0.5s
-> sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 10.87MB / 10.87MB 0.5s
-> sha256:f8652afaf88c25f0d2235d547d892591067a$4026a7fa$0019df9f300af6fc 1.86KB / 1.86KB 0.0s
-> sha256:0e2954d541cdd309201d21a73a9d1db78665c1b95b74f32b009e0677ae1e3 54.92MB / 54.92MB 199.3s
-> sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 10.87MB / 10.87MB 253.65s
-> sha256:6f9f748954f093fe01725f4fab05e0b4eb0a81a0f6f9112cfc4d378f7 183.50MB / 183.50MB 389.65s
-> sha256:0e2954d541cdd309201d21a73a9d1db78665c1b95b74f32b009e0677ae1e3 6.20MB / 6.20MB 221.4s
-> extracting sha256:0e2954d541cdd309201d21a73a9d1db78665c1b95b74f32b009e0677ae1e3 2.0s
-> extracting sha256:9b029c73b52b07d5c07a54fb0f3e92199a206c714b53a32ae67d19231fcd 0.2s
-> extracting sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 0.3s
-> sha256:f8652afaf88c25f0d2235d547d892591067a$4026a7fa$0019df9f300af6fc 14.21MB / 14.21MB 270.0s
-> sha256:404f08040ac043c0522c09f25d01c51fcea0866f7ee70e0c243b2f31b0f7 235B / 235B 254.8s
-> extracting sha256:0494a0811622b31c027cc322ca043937f009f50a0a0f15c01ade718793 2.4s
-> sha256:c4f42e2be53b900ebf1c040c1d13de38434ccc5f50954e5084a0109a3a3f 2.21MB / 2.21MB 266.5s
-> [auth] library/python:pull token for registry-1.docker.io 0.0s
```



2.Upload in docker hub



```
Windows\System32\cmd.exe - docker build -t customer-care-ibm .
--severity string Only report vulnerabilities of provided level
                    or higher (low/medium/high)
--token string      Authentication token to login to the third
                    party scanning provider
--version           Display version of the scan plugin
'docker scan' requires exactly 1 argument

F:\Qm\IBM project\Sample2>docker build -t customer-care-ibm .
[+] Building 214.7s (11/12)
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 32B                                                0.0s
=> [internal] load .dockerignore                                                    0.0s
=> => transferring context: 2B                                                    0.0s
=> [internal] load metadata for docker.io/library/python:3.6                     3.1s
=> [auth] library/python:pull token for registry-1.docker.io                     0.0s
=> [internal] load build context                                                    1.9s
=> => transferring context: 95.28kB                                                1.8s
=> [1/7] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa 0.0s
=> CACHED [2/7] RUN apt-get update                                                 0.0s
=> CACHED [3/7] WORKDIR /app                                                       0.0s
=> [4/7] ADD . /app                                                                1.6s
=> [5/7] COPY requirements.txt /app                                                0.0s
=> CANCELED [6/7] RUN python3 -m pip install -r requirements.txt                 208.0s
context canceled

F:\Qm\IBM project\Sample2>
F:\Qm\IBM project\Sample2>docker build -t customer-care-ibm .
[+] Building 142.1s (9/11)
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 32B                                                0.0s
=> [internal] load .dockerignore                                                    0.0s
=> => transferring context: 2B                                                    0.0s
=> [internal] load metadata for docker.io/library/python:3.6                     1.4s
=> [1/7] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa 0.0s
=> [internal] load build context                                                    0.2s
=> => transferring context: 233.89kB                                              0.1s
=> CACHED [2/7] RUN apt-get update                                                 0.0s
=> CACHED [3/7] WORKDIR /app                                                       0.0s
=> [4/7] ADD . /app                                                                0.7s
=> [5/7] COPY requirements.txt /app                                                0.1s
=> [6/7] RUN python3 -m pip install -r requirements.txt                          139.8s
=> => # Collecting ripp>0.5
=> => #   Downloading ripp-3.6.0-py3-none-any.whl (5.3 kB)
=> => #   Collecting typing_extensions>3.6.4
=> => #   Downloading typing_extensions-4.1.1-py3-none-any.whl (26 kB)
=> => #   Building wheels for collected packages: ibm-db
=> => #   Building wheel for ibm-db (PEP 517): started
```

3. Building Image

```
C:\Windows\System32\cmd.exe
-> [internal] load build definition from Dockerfile
-> => transferring dockerfile: 32B
-> [internal] load .dockerignore
-> => transferring context: 2B
-> [internal] load metadata for docker.io/library/python:3.6
-> [auth] library/python:pull token for registry-1.docker.io
-> [internal] load build context
-> => transferring context: 95.28kB
-> [1/7] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f8d22354d547d892591067aa4026a7fa
-> CACHED [2/7] RUN apt-get update
-> CACHED [3/7] WORKDIR /app
-> [4/7] ADD . /app
-> [5/7] COPY requirements.txt /app
-> CANCELED [6/7] RUN python3 -m pip install -r requirements.txt
context canceled

F:\Own\IBM project\Sample2>
F:\Own\IBM project\Sample2>docker build -t customer-care-ibm .
[*] Building 147.7s (12/12) FINISHED
-> [internal] load build definition from Dockerfile
-> => transferring dockerfile: 32B
-> [internal] load .dockerignore
-> => transferring context: 2B
-> [internal] load metadata for docker.io/library/python:3.6
-> [1/7] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f8d22354d547d892591067aa4026a7fa
-> [internal] load build context
-> => transferring context: 233.89kB
-> CACHED [2/7] RUN apt-get update
-> CACHED [3/7] WORKDIR /app
-> [4/7] ADD . /app
-> [5/7] COPY requirements.txt /app
-> [6/7] RUN python3 -m pip install -r requirements.txt
-> [7/7] RUN python3 -m pip install ibm_db
-> exporting to image
-> exporting layers
-> writing image sha256:5d9a66042ecb308c9443e0ae8932620d7540eca2594fe813b1352421b7acd09c
-> naming to docker.io/library/customer-care-ibm

F:\Own\IBM project\Sample2>docker login
Authenticating with existing credentials...
Login Succeeded

Logging in with your password grants your terminal complete access to your account.
For better security, log in with a limited-privilege personal access token. Learn more at https://docs.docker.com/go/access-tokens/

F:\Own\IBM project\Sample2>docker tag customer-care-ibm cyrusjetson/customer-care-ibm

F:\Own\IBM project\Sample2>
```

4.Pushing docker image

```
C:\Windows\System32\cmd.exe - docker push cyrusjetson/customer-care-ibm
F:\Own\IBM project\Sample2>docker build -t customer-care-ibm .
[*] Building 147.7s (12/12) FINISHED
-> [internal] load build definition from Dockerfile
-> => transferring dockerfile: 32B
-> [internal] load .dockerignore
-> => transferring context: 2B
-> [internal] load metadata for docker.io/library/python:3.6
-> [1/7] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f8d22354d547d892591067aa4026a7fa
-> [internal] load build context
-> => transferring context: 233.89kB
-> CACHED [2/7] RUN apt-get update
-> CACHED [3/7] WORKDIR /app
-> [4/7] ADD . /app
-> [5/7] COPY requirements.txt /app
-> [6/7] RUN python3 -m pip install -r requirements.txt
-> [7/7] RUN python3 -m pip install ibm_db
-> exporting to image
-> exporting layers
-> writing image sha256:5d9a66042ecb308c9443e0ae8932620d7540eca2594fe813b1352421b7acd09c
-> naming to docker.io/library/customer-care-ibm

F:\Own\IBM project\Sample2>docker login
Authenticating with existing credentials...
Login Succeeded

Logging in with your password grants your terminal complete access to your account.
For better security, log in with a limited-privilege personal access token. Learn more at https://docs.docker.com/go/access-tokens/

F:\Own\IBM project\Sample2>docker tag customer-care-ibm cyrusjetson/customer-care-ibm

F:\Own\IBM project\Sample2>docker push cyrusjetson/customer-care-ibm
Using default tag: latest
The push refers to repository [docker.io/cyrusjetson/customer-care-ibm]
e450b874bb2d: Pushing 2.04kB
e5bf88e911c: Pushing > ] 1.638MB/176.2MB
5d9a6602ee3: Pushing [=====] 2.56kB
455af8242a8b: Pushing > ] 2.194MB/114.7MB
1c8e240e77a2: Pushing 1.536kB
41e9637cb82: Waiting
aa4c888c19f6: Waiting
8ba9f690e88a: Waiting
3d607d59ef9f: Waiting
1e18e7efcc2: Preparing
c3a0d593ed24: Waiting
26a504e63be4: Waiting
8bf42db0de72: Waiting
31892cc314cb: Waiting
11936051f93b: Waiting
```

```
C:\Windows\System32\cmd.exe - docker push cyrusjetson/customer-care-ibm

+ Building 147.7s (12/12) FINISHED
-> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 32B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/python:3.6
=> [1/7] FROM docker.io/library/python:3.6@sha256:f852afaf88c25f0d22354d547d892591067aa4026a7fa
=> [internal] load build context
=> => transferring context: 233.89kB
=> CACHED [2/7] RUN apt-get update
=> CACHED [3/7] WORKDIR /app
=> [4/7] ADD . /app
=> [5/7] COPY requirements.txt /app
=> [6/7] RUN python3 -m pip install -r requirements.txt
=> [7/7] RUN python3 -m pip install ibm_db
=> exporting to image
=> => exporting layers
=> => writing image sha256:5d9a6042ecb308c9443e0ae8932620d7540eca2594fe813b1352421b7acd09c
=> => naming to docker.io/library/customer-care-ibm

Qan\IBM project\Sample2>docker login
Authenticating with existing credentials...
Login Succeeded

Logging in with your password grants your terminal complete access to your account.
For better security, log in with a limited-privilege personal access token. Learn more at https://docs.d
ocker.com/go/access-tokens/

Qan\IBM project\Sample2>docker tag customer-care-ibm cyrusjetson/customer-care-ibm

Qan\IBM project\Sample2>docker push cyrusjetson/customer-care-ibm
Using default tag: latest
The push refers to repository [docker.io/cyrusjetson/customer-care-ibm]
450b874bb2d: Pushed
3bf88e9911c: Pushing 38.38MB/176.2MB
46a68692e3: Pushed
45af8242a8b: Pushing 116.6MB
c0a240c77a2: Pushed
1e9637cbb82: Pushed
a4c808c19f6: Mounted from library/python
3e9f698e8ba: Mounted from library/python
e607d59e49f: Mounted from library/python
e18e7e1fcc2: Pushing 184.8kB/18.48MB
3a0d593ed24: Pushing 145.4MB/528.4MB
6e304e63be4: Mounted from library/python
b42db0de72: Pushing 1.42MB/18.95MB
1892cc314cb: Waiting
1936051f93b: Waiting
```

5. Running on Docker playground

The screenshot displays the Docker Playground interface in a web browser. The top navigation bar includes links for IBM Cloud Container Registry, Docker Hub, and Image Layer Details. The main content area shows a container named 'cdmjrce3tccg009qdm3g' with an IP of 192.168.0.28. The container's memory usage is 30.21% (1.18GiB / 3.906GiB) and CPU usage is 139.31%. The SSH command is 'ssh ip172-18-0-28-cdmjrce3tccg009qdm3g@direct.labs.pla'. Below the container details, there is a terminal window showing the command 'docker pull cyrusjetson/customer-care-ibm' and its output, which includes a list of layers being pulled and their sizes. The terminal output shows that the image was successfully pulled from the Docker Hub repository.

IBM Cloud Container Registry - C X IBM Cloud Container Registry - C X Docker Hub X Image Layer Details - cyrusjetson X Docker Playground X

labs.play-with-docker.com/p/cdmjrae3tccg009qdm2g#cdmjrae3_cdmjrae3tccg009qdm3g

03:57:15

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.28
node1

cdmjrae3_cdmjrae3tccg009qdm3g

IP
192.168.0.28

OPEN PORT 5000

Memory
35.12% (1.372GiB / 3.906GiB)

CPU
0.80%

SSH
ssh ip172-18-0-28-cdmjrae3tccg009qdm2g@direct.labs.pla

DELETE EDITOR

```

c4f42be2be53: Pull complete
5c412c1d3034: Pull complete
ee820dalc6f63: Pull complete
bbe8d0d61fa6: Pull complete
fa8074a00a1c: Pull complete
c9re261af39f: Pull complete
c6252405e396: Pull complete
Digest: sha256:ee873c39bec40a2ad41d71cbee8511a556b52349108e919ab405568dd19c97bf0
Status: Downloaded newer image for cyrusjetson/customer-care-ibm:latest
docker.io/cyrusjetson/customer-care-ibm:latest
[node1] (local) root@192.168.0.28 ~
$ docker run -p 5000:5000 cyrusjetson/customer-care-ibm
Trying to connect...
connected..
* Serving Flask app 'app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: off
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)

```

Windows Taskbar: 11:39 PM 10-11-2022

6.Setting up container registry

Command Prompt

```

Plug-in 'container-registry 1.0.2' was already installed. Do you want to update it with 'container-registry[cr] 1.0.2' or not? [y/N] > Y
Attempting to download the binary file...
11.90 MiB / 11.90 MiB [=====] 100.00% 4s
12476416 bytes downloaded
Installing binary...
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\jetso\bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to show its details.

C:\Users\jetso>ibmcloud plugin install container-registry -r 'IBM Cloud'
Looking up 'container-registry' from repository 'IBM'...
FAILED
* 'IBM' does not exist as an available plug-in repo.
Use 'ibmcloud plugin repos' to list all the added repos.

C:\Users\jetso>ibmcloud cr region-set ap-south
The region is set to 'ap-south', the registry is 'au.icr.io'.

C:\Users\jetso>ibmcloud cr namespace-add customer-care-ibm
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.
Adding namespace 'customer-care-ibm' in resource group 'Default' for account 'Jetson Cyrus J's Account in registry au.icr.io...
Successfully added namespace 'customer-care-ibm'

C:\Users\jetso>

```

Windows Taskbar: 12:08 AM 11-11-2022

```
Command Prompt - docker push au.icr.io/customer-care-ibm/customer-care-ibm

C:\Users\jetso>ibmcloud cr login
Logging 'docker' in to 'au.icr.io'...
Logged in to 'au.icr.io'.

C:\Users\jetso>docker push au.icr.io/customer-care-ibm/customer-care-ibm
Using default tag: latest
The push refers to repository [au.icr.io/customer-care-ibm/customer-care-ibm]
6e69f1ff594: Pushed
e6305036d3f0: Pushed
3a4ff6f5bc4e1: Pushed
7229f373b05a: Pushed
1c8a240e77a2: Pushed
41e9637cbb82: Pushed
aa4c888c19f6: Pushed
8ba9f690e8ba: Pushed
3e607d59ef9f: Pushed
1e18e7elfcc2: Pushed
3a8d593ed2d4: Pushed
26a504e63be4: Pushing 151.9MB/151.9MB
8bf42db0de72: Pushed
31892cc314cb: Retrying in 1 second
11936051f93b: Retrying in 1 second
net/http: TLS handshake timeout

C:\Users\jetso>docker push au.icr.io/customer-care-ibm/customer-care-ibm
Using default tag: latest
The push refers to repository [au.icr.io/customer-care-ibm/customer-care-ibm]
6e69f1ff594: Layer already exists
e6305036d3f0: Layer already exists
3a4ff6f5bc4e1: Layer already exists
7229f373b05a: Layer already exists
1c8a240e77a2: Layer already exists
41e9637cbb82: Layer already exists
aa4c888c19f6: Layer already exists
8ba9f690e8ba: Layer already exists
3e607d59ef9f: Layer already exists
1e18e7elfcc2: Layer already exists
3a8d593ed2d4: Layer already exists
26a504e63be4: Pushing [=====] 156.5MB
8bf42db0de72: Layer already exists
31892cc314cb: Pushed
11936051f93b: Pushing [=====] 117MB/123.9MB
```

7. Uploading image in container registry

The screenshot shows the IBM Cloud Container Registry web interface. The left sidebar contains navigation links: IBM Cloud, Container Registry, Quick start, Namespaces (1), Repositories (1), Images (1), Trash (0), and Settings. The main content area is titled 'Repositories' and shows a table of repositories. The 'customer-care-ibm' repository is listed with 1 image. The image details show a digest of 396f2b181a98, manifest type of Docker, and a size of 487 MB.

Name	Image count	Namespace	Last updated
customer-care-ibm au.icr.io/customer-care-ibm/customer-care-ibm	1	customer-care-ibm	1 hour ago

Digest	Manifest type	Tags	Created	Size	Security status
396f2b181a98	Docker	latest	1 hour ago	487 MB	Unscanned

8. Deploy in Docker

