

Sprint 4

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Sprint 4:

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**

Output :

1. **Containerize the app:**

Containers

Images

Volumes

Dev Environments BETA

Extensions BETA

Add Extensions

Images on disk

Last refresh: 4 days ago8.1 MB total size0 Bytes / 8.1 MB in use

Images

Give feedback

An image is a read-only template with instructions for creating a Docker container. [Learn more](#)

LOCAL

REMOTE REPOSITORIES

Search

	NAME	TAG	STATUS	CREATED	SIZE	ACTIONS
<input type="checkbox"/>	customer-care-ibm 5c4900ded843	latest	Unused	less than a minute a	1.12 GB	<div></div> <div></div> <div></div>
<input type="checkbox"/>	uifd/ui-for-docker 965940f98fa5	latest	Unused	about 6 years ago	8.1 MB	<div></div> <div></div> <div></div>

Showing 2 items

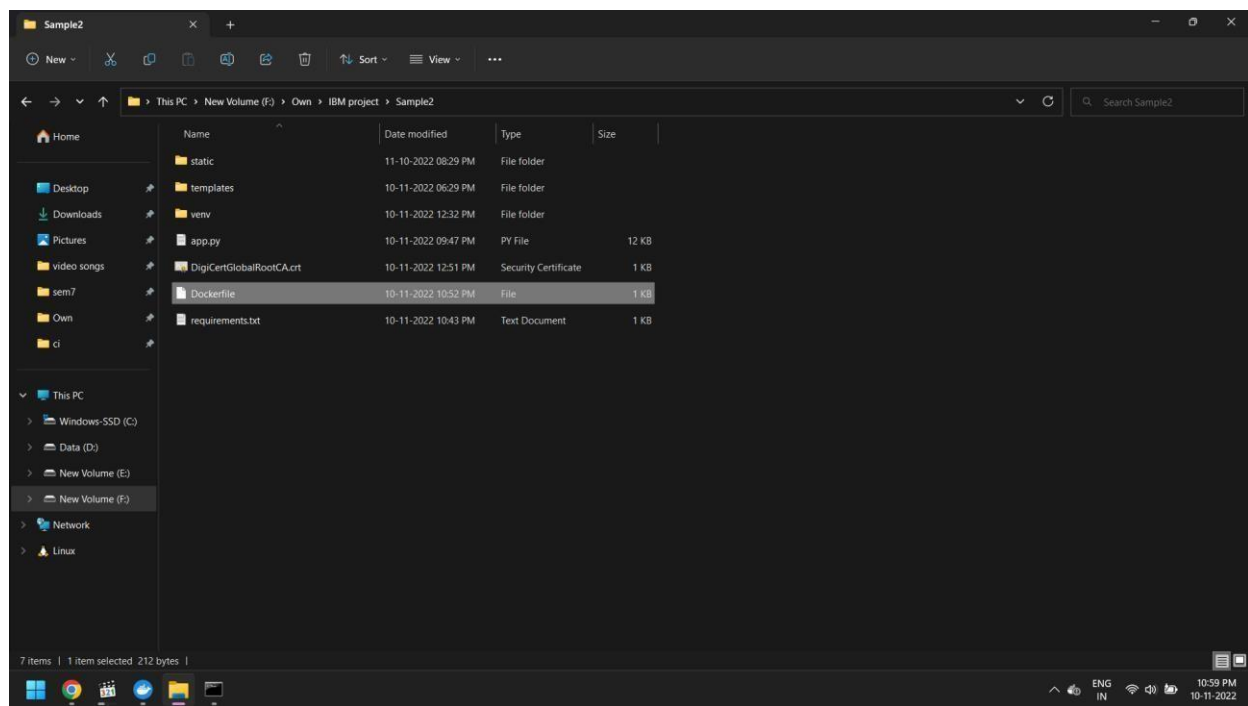
RAM 3.34GBCPU 0.32%Connected to Hub

v4.13.0

11:05 PM10-11-2022

```
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: 19.83MB 0.4s
-> CANCELED [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
-> --sha256:0897a0072bec094f5cc3872359c3de510f82214c04da090390370c30ea0 2.22MB / 2.22MB 0.0s
-> --sha256:5426061a007c3e3ad2cc21fc089abbc0486a7614c0892006ff721f144b184 0.27MB / 0.27MB 0.0s
-> --sha256:9b029c73b52b97d5c07a54fb0f3e921995a296c714b53a32ae67d19231fcd 0B / 5.15MB 0.5s
-> --sha256:f8652afaf88c25f0d2235d547d892591067a@4026a7fa@019f9f300af6fc 1.86MB / 1.86MB 0.0s
-> --sha256:0e29546d541cdd309281d21a73a9d1db78665c1b95b74f32b009eb77a6e1e3 0B / 54.92MB 0.5s
-> --sha256:cb5b7ae361722f070eca53f35823e21baa85d61d5d95cd5a95ab53d740cdd56 0B / 10.87MB 0.5s
-> [cached 1/7] RUN apt-get update 0.4s
-> CACHED [3/7] WORKDIR /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:\Dw\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 meta-data for docker.io/library/python:3.6 0.5s
-> [internal] load build context 0.1s
-> --transferring context: 148.79MB 0.1s
-> [1/7] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d2235d547d892591067a@4026a7fa@019f9f300af6fc 389.6s
-> --resolve docker.io/library/python:3.6@sha256:f8652afaf88c25f0d2235d547d892591067a@4026a7fa 0.0s
-> --sha256:0897a0072bec094f5cc3872359c3de510f82214c04da090390370c30ea0 2.22MB / 2.22MB 0.0s
-> --sha256:5426061a007c3e3ad2cc21fc089abbc0486a7614c0892006ff721f144b184 0.27MB / 0.27MB 0.0s
-> --sha256:9b029c73b52b97d5c07a54fb0f3e921995a296c714b53a32ae67d19231fcd 5.15MB / 5.15MB 36.6s
-> --sha256:cb5b7ae361722f070eca53f35823e21baa85d61d5d95cd5a95ab53d740cdd56 10.87MB / 10.87MB 51.2s
-> --sha256:f8652afaf88c25f0d2235d547d892591067a@4026a7fa@019f9f300af6fc 1.86MB / 1.86MB 0.0s
-> --sha256:0e29546d541cdd309281d21a73a9d1db78665c1b95b74f32b009eb77a6e1e3 54.92MB / 54.92MB 189.3s
-> --sha256:6484a40116229311-027c-cac329-a6c917f4d095f56ba93a6f15c01aade718703 54.57MB / 54.57MB 263.6s
-> --sha256:6f9f74896dfa93fe0172f594faba85e0b4e8a0481a0fef9d9112efc7e4d3c78f7 183.50MB / 196.51MB 389.6s
-> --sha256:5e3b1213efc50500c70bd082981945c164de2a37205e0a02dada821124c743 6.20MB / 6.20MB 221.4s
-> --extracting sha256:0e29546d541cdd309281d21a73a9d1db78665c1b95b74f32b009eb77a6e1e3 2.0s
-> --extracting sha256:0897a0072bec094f5cc3872359c3de510f82214c04da090390370c30ea0 0.2s
-> --extracting sha256:cb5b7ae361722f070eca53f35823e21baa85d61d5d95cd5a95ab53d740cdd56 0.3s
-> --sha256:94dfdc56134f2eae7a17e243bf5c7450c40ed109c5d70676f41c1244006752 14.21MB / 14.21MB 278.0s
-> --sha256:04f02044ba0432ca522cb09f254b1c91fcea0806bfee0be0e263b2f31bab7 235B / 235B 254.8s
-> --extracting sha256:6484a40116229311-027c-cac329-a6c917f4d095f56ba93a6f15c01aade718703 2.4s
-> --sha256:c4f40be2e52050acbfcc0001d8f130e53043ccc5f50954a508040a109a3af 2.21MB / 2.21MB 266.5s
-> [auth] library/python:pull token for registry-1.docker.io 0.0s
```



2.Upload in docker hub

The screenshot shows the Docker Hub interface for the repository `cyrusjetson/customer-care-ibm`. The page is divided into several sections:

- Header:** Shows the username `cyrusjetson` and the repository name `customer-care-ibm`. It also indicates "Using 0 of 1 private repositories." with a [Get more](#) link.
- Tabs:** `General`, `Tags`, `Builds`, `Collaborators`, `Webhooks`, and `Settings`.
- General Section:**
 - Add a short description:** A light blue box with an information icon and text: "Add a short description for this repository. The short description is used to index your content on Docker Hub and in search engines. It's visible to users in search results." with an [Update](#) link.
 - Description:** The repository name `cyrusjetson/customer-care-ibm` is shown. Below it, the text "Description" is followed by "This repository does not have a description" and an edit icon. Below that, it says "Last pushed: in a few seconds".
 - Docker commands:** A section with the text "To push a new tag to this repository," and a dark blue button containing the command `docker push cyrusjetson/customer-care-ibm:tagname`. A [Public View](#) button is also present.
- Tags and scans:** A section with the text "Tags and scans" and a status "VULNERABILITY SCANNING - DISABLED" with an [Enable](#) link. Below it, it says "This repository is empty. When it's not empty, you'll see a list of the most recent tags here."
- Automated Builds:** A section with the text "Automated Builds" and a description: "Manually pushing images to 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."

The Windows taskbar at the bottom shows the time as 11:04 PM on 10-11-2022.

```
C:\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:\Omn\IBM project\Sample2>docker build -t customer-care-ibm .
[+] Building 214.7s (11/12)
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 12B                                                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                                                  1.0s
=> => transferring context: 95.20kB                                              1.8s
=> [1/7] FROM docker.io/library/python:3.6@sha256:f8052aaf88c25f8d22354d547d892591067aa402ba7fa 0.0s
=> 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                                              0.0s
=> CANCELED [6/7] RUN python3 -m pip install -r requirements.txt                208.0s
context canceled

F:\Omn\IBM project\Sample2>

F:\Omn\IBM project\Sample2>docker build -t customer-care-ibm .
[+] Building 142.1s (9/11)
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 12B                                                0.0s
=> [internal] load .dockerignore                                                  0.0s
=> => transferring context: 2B                                                    0.0s
=> [internal] load metadata for docker.io/library/python:3.6                    3.4s
=> [1/7] FROM docker.io/library/python:3.6@sha256:f8052aaf88c25f8d22354d547d892591067aa402ba7fa 0.0s
=> [internal] load build context                                                  0.2s
=> => transferring context: 233.80kB                                             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                                              0.0s
=> [6/7] RUN python3 -m pip install -r requirements.txt                          139.8s
=> => # Collecting zipp==0.5
=> => #   Downloading zipp-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                                0.0s
=> => transferring dockerfile: 12B                                                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                                                  1.0s
=> => transferring context: 95.20kB                                              1.8s
=> [1/7] FROM docker.io/library/python:3.6@sha256:f8052aaf88c25f8d22354d547d892591067aa402ba7fa 0.0s
=> 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                                              0.0s
=> CANCELED [6/7] RUN python3 -m pip install -r requirements.txt                208.0s
context canceled

F:\Omn\IBM project\Sample2>

F:\Omn\IBM project\Sample2>docker build -t customer-care-ibm .
[+] Building 147.7s (12/12) FINISHED
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 12B                                                0.0s
=> [internal] load .dockerignore                                                  0.0s
=> => transferring context: 2B                                                    0.0s
=> [internal] load metadata for docker.io/library/python:3.6                    3.4s
=> [1/7] FROM docker.io/library/python:3.6@sha256:f8052aaf88c25f8d22354d547d892591067aa402ba7fa 0.0s
=> [internal] load build context                                                  0.2s
=> => transferring context: 233.80kB                                             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                                              0.0s
=> [6/7] RUN python3 -m pip install -r requirements.txt                          141.2s
=> [7/7] RUN python3 -m pip install ibm-db                                       1.2s
=> => exporting layers                                                            0.0s
=> => exporting layers                                                            0.0s
=> => writing image sha256:5d8a60042ecb10bc9442b0a0893262047540eca2594fe813b1352421b7acd09c 0.0s
=> => naming to docker.io/library/customer-care-ibm                             0.0s

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

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

4. Pushing docker image

```
C:\Windows\System32\cmd.exe - docker push cyrusjetson/customer-care-ibm
F:\Qum\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:f852afaf88c25f0d22354d547d892591967aa402ba7fa
-> [internal] load build context
-> => transferring context: 233.00kB
-> 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 sha256:509a60842ecb308c944308ae8932520d7540eca2594fe813b1352421b7acd09c
-> naming to docker.io/library/customer-care-ibm

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

F:\Qum\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 [>] 1.638MB/176.2MB
e5bf88e9911c: Pushing [====>] 2.56kB
d6a68602ee3: Pushing [====>] 2.194MB/114.7MB
45af8242a8b: Pushing [>]
1c0a240e77a2: Pushing [>] 1.536kB
41e9637cbb82: Waiting
aa4c808c19f6: Waiting
8ba9f690e8ba: Waiting
3a0d593ed24: Waiting
1e18e7efcc2: Preparing
c3a0d593ed24: Waiting
26a504e63be4: Waiting
8bf42db0de72: Waiting
31892cc314cb: Waiting
1936051f93b: 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:f852afaf88c25f0d22354d547d892591967aa402ba7fa
-> [internal] load build context
-> => transferring context: 233.00kB
-> 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 sha256:509a60842ecb308c944308ae8932520d7540eca2594fe813b1352421b7acd09c
-> naming to docker.io/library/customer-care-ibm

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

F:\Qum\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: Pushed
e5bf88e9911c: Pushed 38.38MB/176.2MB
d6a68602ee3: Pushed
45af8242a8b: Pushing 116.6MB
1c0a240e77a2: Pushed
41e9637cbb82: Pushed
aa4c808c19f6: Mounted from library/python
8ba9f690e8ba: Mounted from library/python
e450b874bb2d: Pushed 184.8kB/18.48MB
1e18e7efcc2: Pushing 145.0MB/528.0MB
3a0d593ed24: Pushing 1.42MB/18.95MB
26a504e63be4: Mounted from library/python
8bf42db0de72: Pushing
31892cc314cb: Waiting
1936051f93b: Waiting
```

5. Running on Docker playground

The image displays two screenshots of the Docker Playground interface, showing the process of pulling and running a Docker container.

Top Screenshot:

- Instances:** Shows a single instance named "node1" with IP 192.168.0.28.
- Container Details:** The container is named "cdmjrae3_cdmjrce3tccg009qdm3g". It has IP 192.168.0.28 and is using the "latest" tag of the "cyrusjetson/customer-care-ibm" image. The memory usage is 30.21% (1.18GiB / 3.906GiB) and CPU usage is 139.31%.
- Terminal:** The terminal shows the command `docker pull cyrusjetson/customer-care-ibm` being executed. The output indicates that the image is being pulled from the registry, with various layers being downloaded and extracted. The total size of the image is 16.91MB/38.71MB.

Bottom Screenshot:

- Instances:** Shows the same instance "node1" with IP 192.168.0.28.
- Container Details:** The container is named "cdmjrae3_cdmjrce3tccg009qdm3g". It has IP 192.168.0.28 and is using the "latest" tag of the "cyrusjetson/customer-care-ibm" image. The memory usage is 35.12% (1.372GiB / 3.906GiB) and CPU usage is 0.80%.
- Terminal:** The terminal shows the command `docker run -p 5000:5000 cyrusjetson/customer-care-ibm` being executed. The output indicates that the container is running successfully. The terminal also shows the status of the container, including the image used and the command executed.

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'

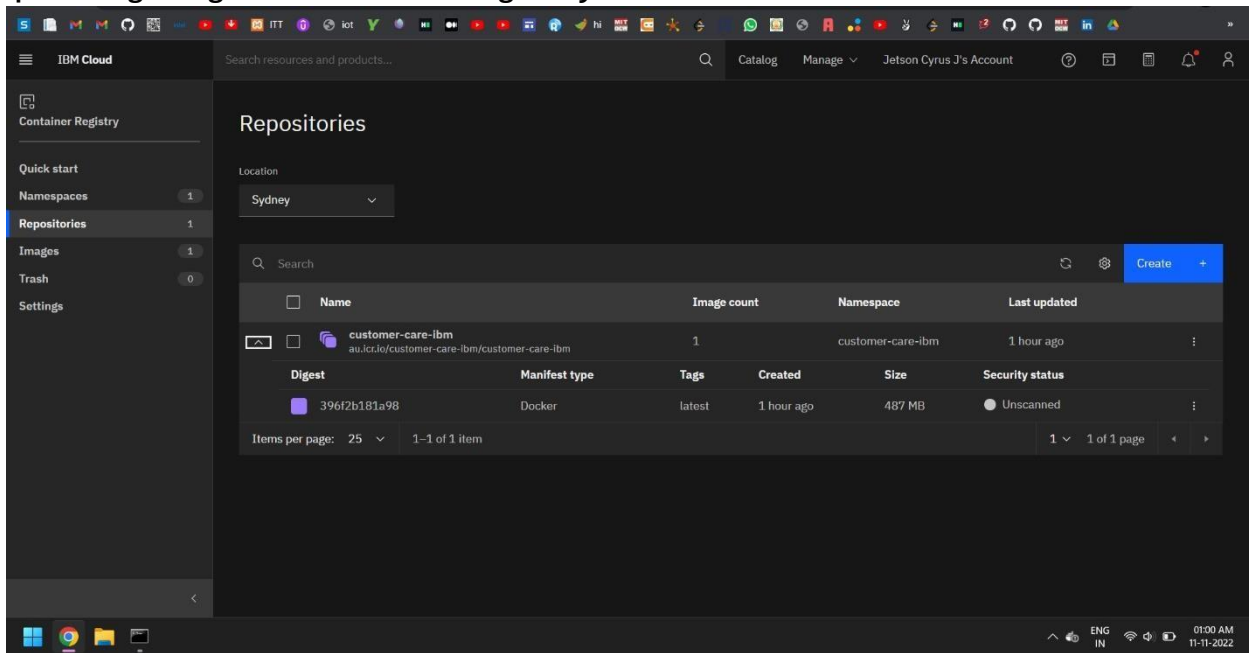
C:\Users\jetso>

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'.

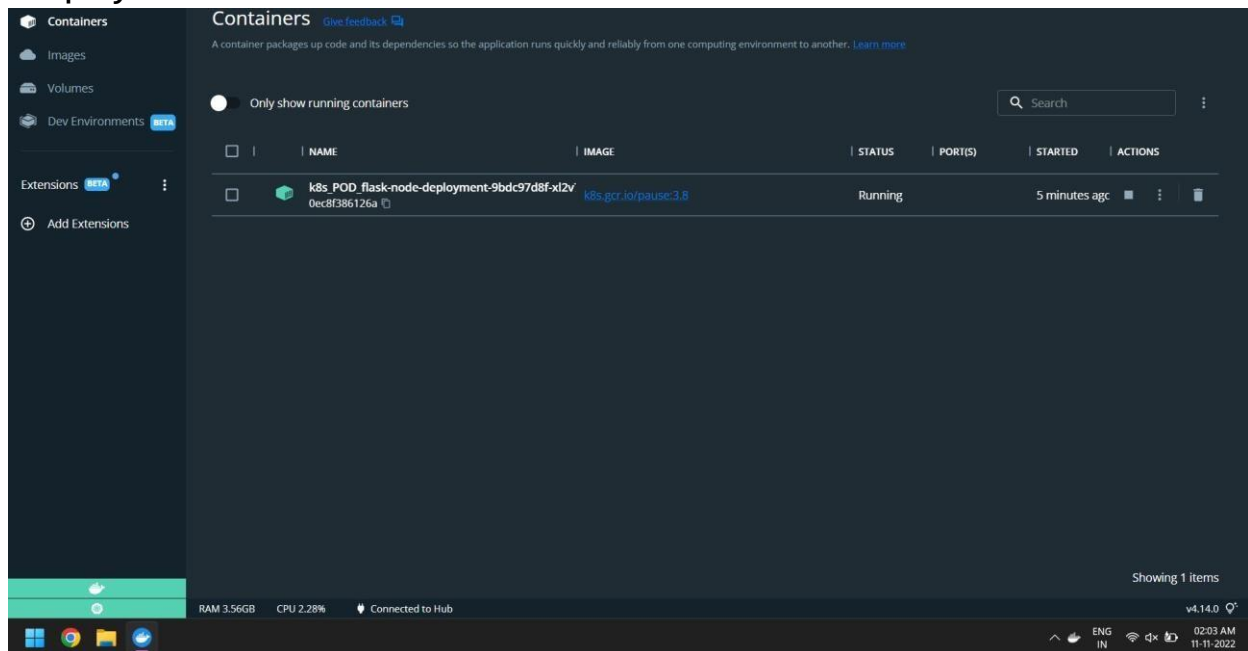
C:\Users\jetso>docker push au.icr.io/customer-care-ibm/customer-care-ibm
Using default tag: latest
The push refers to repository [au.icr.io/customer-care-ibm/customer-care-ibm]
66e69f1ff594: Pushed
e6305036d3f0: Pushed
3a46f5b4de1: Pushed
7229f373b05a: Pushed
1c0a240e77a2: Pushed
41e9637cbb82: Pushed
aad4b08c19f6: Pushed
8ba9f690e8ba: Pushed
3e607d59ef9f: Pushed
1e18e7e1fcc2: Pushed
c3a0d593ed24: 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]
66e69f1ff594: Layer already exists
e6305036d3f0: Layer already exists
3a46f5b4de1: Layer already exists
7229f373b05a: Layer already exists
1c0a240e77a2: Layer already exists
41e9637cbb82: Layer already exists
aad4b08c19f6: Layer already exists
8ba9f690e8ba: Layer already exists
3e607d59ef9f: Layer already exists
1e18e7e1fcc2: Layer already exists
c3a0d593ed24: Layer already exists
26a504e63be4: Pushing [=====] 156.5MB
8bf42db0de72: Layer already exists
31892cc314cb: Pushed
11936051f93b: Pushing [=====] 117MB/123.9MB
```


7. Uploading image in container registry



8. Deploy in Docker



9. Upload Demo Video Youtube video Link : https://youtu.be/Yi_fo4sqhQA

