

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
9. Upload Demo Video -
https://drive.google.com/file/d/1_wCvtLk7l9aGg1tbrEC7XlHUOrRggq9f/view?usp=sharing

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](#)

LOCALREMOTE 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

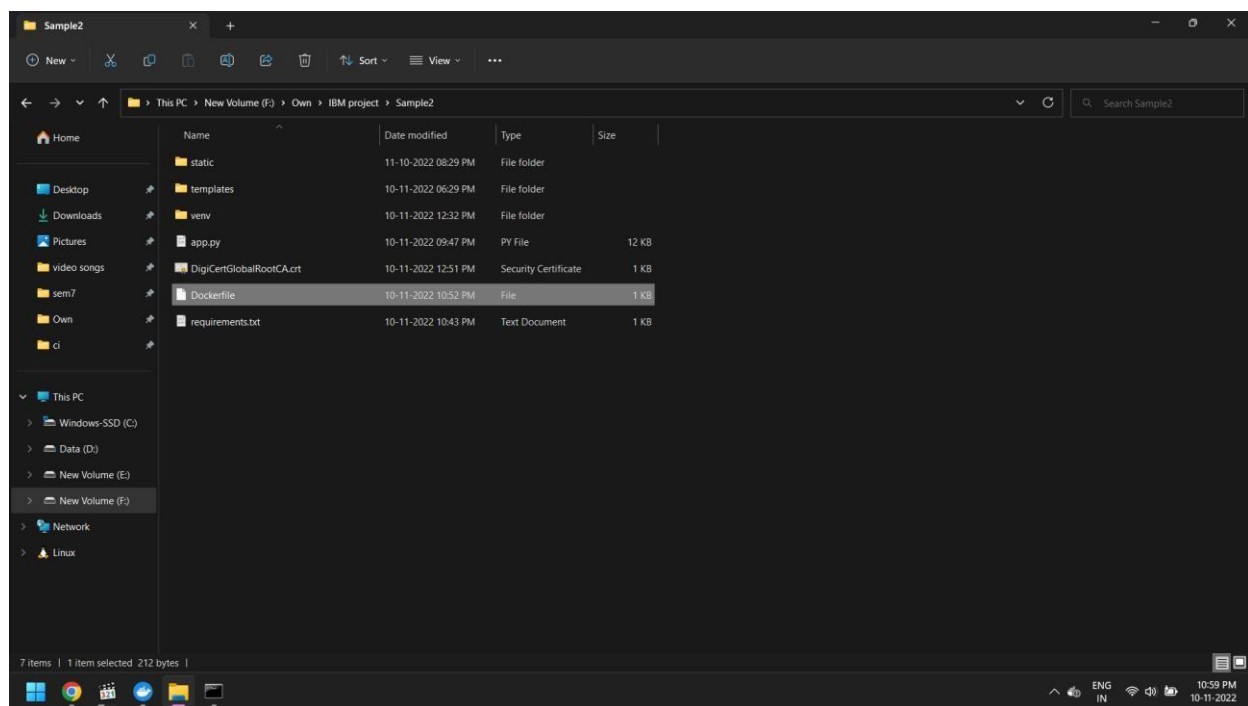
v4.13.0

ENG
IN

11:05 PM
10-11-2022

```
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 0.0s
-> 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@sha256:f8652afaf88c25f0d2235d547d892591067a 0.0s
-> sha256:0897a407abec079df5ac31872359c2de510f82214c0448e26393b376d3b0bd 2.22kB / 2.22kB 0.0s
-> sha256:5426848d07c3e3ad48c0e21fc080ad0c048a27634c089a000ff713744018a 0.27kB / 0.27kB 0.0s
-> sha256:9b29c73b52b97d5c07a54fb0f3e921995a206c714b53a32ae67d19231fed 0B / 5.15MB 0.0s
-> sha256:f8652afaf88c25f0d2235d547d892591067a@sha256:f8652afaf88c25f0d2235d547d892591067a 1.86kB / 1.86kB 0.0s
-> sha256:0e2954d541cdd309281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3 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: 25B 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: 144.79kB 0.1s
-> [1/7] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d2235d547d892591067a@sha256:f8652afaf88c25f0d2235d547d892591067a 389.65s
-> resolve docker.io/library/python:3.6@sha256:f8652afaf88c25f0d2235d547d892591067a@sha256:f8652afaf88c25f0d2235d547d892591067a 0.0s
-> sha256:0897a407abec079df5ac31872359c2de510f82214c0448e26393b376d3b0bd 2.22kB / 2.22kB 0.0s
-> sha256:5426848d07c3e3ad48c0e21fc080ad0c048a27634c089a000ff713744018a 0.27kB / 0.27kB 0.0s
-> sha256:9b29c73b52b97d5c07a54fb0f3e921995a206c714b53a32ae67d19231fed 0.15kB / 5.15MB 0.0s
-> sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 10.87MB / 10.87MB 51.2s
-> sha256:f8652afaf88c25f0d2235d547d892591067a@sha256:f8652afaf88c25f0d2235d547d892591067a 1.86kB / 1.86kB 0.0s
-> sha256:0e2954d541cdd309281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3 54.92MB / 54.92MB 199.3s
-> sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 253.65s
-> sha256:6f9f74895d4f03fe0172f54fab05e0b4e0a01a0f0f0112efc7e4d378f7 183.50MB / 183.50MB 389.65s
-> sha256:0e2954d541cdd309281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3 2.0s
-> sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 0.2s
-> sha256:6f9f74895d4f03fe0172f54fab05e0b4e0a01a0f0f0112efc7e4d378f7 14.21MB
-> sha256:404f02048a0c9032ca522c8d9f25d01c51fca08060f0ee90e0c4b2b2f3b0d9 225B / 225B 254.8s
-> sha256:0e2954d541cdd309281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3 2.4s
-> sha256:c4f42be2be53b00ebf1c040c1d0f13d538434ccc5f5d954a5084ba010a3a3f 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 has a top navigation bar with 'cyrusjetson', 'Repositories', and 'customer-care-ibm'. Below this is a sub-navigation bar with 'General', 'Tags', 'Builds', 'Collaborators', 'Webhooks', and 'Settings'. The 'General' tab is active, showing a description field with a placeholder 'Add a short description for this repository' and an 'Update' button. The repository name 'cyrusjetson / customer-care-ibm' is displayed. Below the name, there's a 'Description' section stating 'This repository does not have a description' and a 'Last pushed: in a few seconds' status. To the right, there's a 'Docker commands' section with a 'Public View' button and a command box containing 'docker push cyrusjetson/customer-care-ibm:tagname'. Further down, there's a 'Tags and scans' section with a 'VULNERABILITY SCANNING - DISABLED' status and an 'Enable' link. An 'Automated Builds' section explains how to connect to GitHub or Bitbucket for automatic builds. The bottom of the page shows a Windows taskbar with various icons and a system clock showing 11:04 PM on 10-11-2022.

```
CA:\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:\Own\IBM project\Sample2>docker build -t customer-care-ibm .
[*] Building 214.7s (11/12)
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 33B                                                0.0s
=> [internal] load .dockerignore                                                  0.0s
=> => transferring context: 2B                                                    0.0s
=> [internal] load metadata for docker.io/library/python:3.6                    3.3s
=> [auth] library/python:pull token for registry-1.docker.io                    0.0s
=> [internal] load build context                                                  1.8s
=> => transferring context: 95.20kB                                              1.8s
=> [1/7] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25fbd22354d547d892591067aa0826a7fa 0.0s
=> CACHED [2/7] RUN apt-get update                                              0.0s
=> CACHED [3/7] WORKDIR /app                                                    0.0s
=> [4/7] ADD - /app                                                            1.8s
=> [5/7] COPY requirements.txt /app                                            0.0s
=> CANCELED [6/7] RUN python3 -m pip install -r requirements.txt              208.0s
context canceled

F:\Own\IBM project\Sample2>
F:\Own\IBM project\Sample2>docker build -t customer-care-ibm .
[*] Building 142.1s (9/11)
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 33B                                                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:f8652afaf88c25fbd22354d547d892591067aa0826a7fa 0.0s
=> [internal] load build context                                                  0.2s
=> => transferring context: 213.80kB                                              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                                            0.1s
=> [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
[+] Building 147.7s (12/12) FINISHED
=> [internal] load build definition from Dockerfile
=> [internal] load .dockerignore
=> [internal] load context: JB
=> [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: 95.20MB
=> [1/7] FROM docker.io/library/python:3.6@sha256:f862afaf88c25f8d2235a6547d892591867aa4026a7fa
=> 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
208.0s

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
=> [internal] load .dockerignore
=> [internal] load context: JB
=> [internal] load metadata for docker.io/library/python:3.6
=> [1/7] FROM docker.io/library/python:3.6@sha256:f862afaf88c25f8d2235a6547d892591867aa4026a7fa
=> [internal] load build context
=> transferring context: 235.00MB
=> 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
=> writing image sha256:5d9a0a042ecb308c9443b0ae0932620d7540eca2594fe813b1352421b7ac09c
=> 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
=> [internal] load .dockerignore
=> [internal] load context: JB
=> [internal] load metadata for docker.io/library/python:3.6
=> [1/7] FROM docker.io/library/python:3.6@sha256:f862afaf88c25f8d2235a6547d892591867aa4026a7fa
=> [internal] load build context
=> transferring context: 235.00MB
=> 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
=> writing image sha256:5d9a0a042ecb308c9443b0ae0932620d7540eca2594fe813b1352421b7ac09c
=> 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 2.048kB
e5bf88e991c: Pushing > ] 1.638MB/176.2MB
5d9a0a042ecb: Pushing [=====] 2.56kB
d45af822a8b: Pushing > ] 2.194MB/114.7MB
1c0e240e77a2: Pushing 1.536kB
41e9637cbb82: Waiting
aa4c808c19f6: Waiting
8ba9f690e8ba: Waiting
3e0b9759e9ff: Waiting
1e18e7c1fcc2: Preparing
c3a0d593ed24: Waiting
26a504e63be4: Waiting
8bf42db0de72: Waiting
31892cc314cb: Waiting
1193605193b: Waiting
```

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

*] Building 147.7s (12/12) FINISHED
-> [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:3.8
1.4s
-> [1/7] FROM docker.io/library/python:3.8@sha256:f80223540547d892591067aa02aa7fa
0.0s
-> [internal] load build context
0.2s
-> => transferring context: 231.89kB
0.1s
-> CACHED [1/7] RUN apt-get update
0.8s
-> CACHED [1/7] WORKDIR /app
0.8s
-> [4/7] ADD . /app
0.7s
-> [5/7] COPY requirements.txt /app
0.1s
-> [6/7] RUN python3 -m pip install -r requirements.txt
143.2s
-> [7/7] RUN python3 -m pip install ibm_db
1.2s
-> => exporting to image
0.8s
-> => exporting layers
0.0s
-> writing image sha256:5d8a60042eb308c0443e8ae8932520d7540eca2594fe13b1352421b7acd09c
0.0s
-> naming to docker.io/library/customer-care-ibm
0.0s

[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.d
ocker.com/go/access-tokens/

[Omn\IBM project\Sample2]>docker tag customer-care-ibm cyrusjetson/customer-care-ibm

[Omn\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
9bf88e9911c: Pushing 38.38kB/176.2MB
46a68692e3: Pushed
45af8242a8b: Pushing 116.6MB
c0a240e77a2: Pushed
1e9637cbb82: Pushed
a4c808c19f6: Mounted from library/python
ba9f698e8ba: Mounted from library/python
e607d50ef9f: Mounted from library/python
e18e7efcc2: Pushing 184.8kB/18.48MB
3a0d593ed24: Pushing 145.4MB/528.4MB
6a504e63be4: Mounted from library/python
bf42db0de72: Pushing 1.42kB/18.95MB
1892cc314cb: Waiting
1936051f93b: Waiting
```

5. Running on Docker playground

The screenshot shows the Docker Playground interface in a web browser. The top navigation bar includes links to IBM Cloud Container Registry, Docker Hub, and the current playground session. The main area displays the container details for 'cdmjrae3_cdmjrce3tccg009qdm3g', including its IP address (192.168.0.28), memory usage (30.21% / 1.18GiB / 3.906GiB), and CPU usage (139.31%). The SSH command is provided as 'ssh ip172-18-0-28-cdmjrae3tccg009qdm2g@direct.labs.pla'. Below the details, there is a terminal window showing the command 'docker pull cyrusjetson/customer-care-ibm' and its output, which lists the layers being pulled and their sizes. The terminal output shows that the image is being pulled from the 'cyrusjetson/customer-care-ibm' repository, using the 'latest' tag. The layers being pulled include 'python:3.8', 'requirements.txt', and 'ibm_db'. The total size of the image is 16.91MB / 38.71MB.

The screenshot displays the IBM Cloud Container Registry interface. On the left, there's a sidebar with a clock showing 03:57:15, a 'CLOSE SESSION' button, and an 'Instances' section with a '+ ADD NEW INSTANCE' button. The main area shows details for a container instance named 'cdmjrae3_cdmjrce3tccg009qdm3g'. It lists the IP (192.168.0.28), memory usage (35.12% / 1.372GiB / 3.906GiB), CPU usage (0.80%), and an SSH command. Below this, there's a terminal window showing the container's output, including a list of image layers being pulled and the container running a Flask app on port 5000.

6.Setting up container registry

The screenshot shows a Windows Command Prompt window with the following commands and output:

```

C:\Users\jetso> ibmcloud plugin install container-registry --r IBM Cloud
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...
OK
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]
6e669f1ff594: Pushed
e6305036d3f0: Pushed
3a4ff6f5bc4e1: Pushed
7229f373b05a: Pushed
1c8a240e77a2: Pushed
41e9637cbb82: Pushed
aa4c888c19f6: Pushed
8ba9f690e8ba: Pushed
3e607d59ef9f: Pushed
1e18e7elfcc2: Pushed
3a8d593ed24: 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]
6e669f1ff594: 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
3a8d593ed24: Layer already exists
26a504e63be4: Pushing [=====>] 156.5MB
8bf42db0de72: Layer already exists
31892cc314cb: Pushed
11936051f93b: Pushing [=====>] 117MB/123.9MB
```

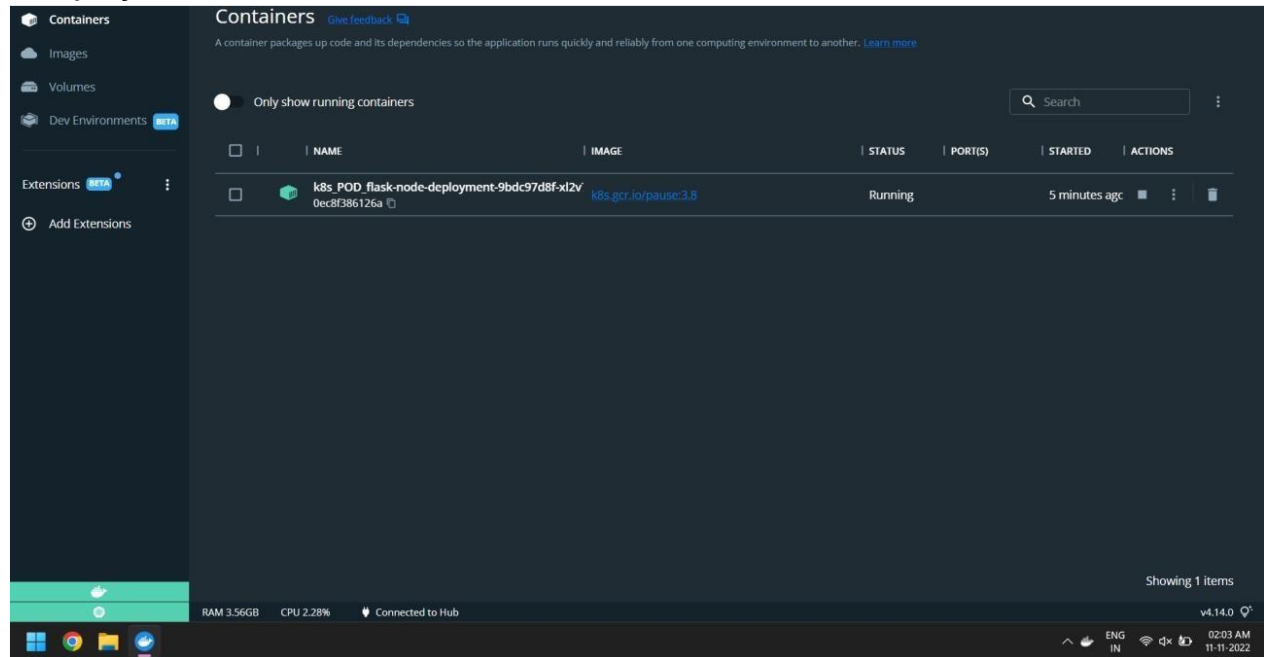
7. Uploading image in container registry

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 list of repositories. The 'customer-care-ibm' repository is selected, showing details for the 'latest' tag. The repository is located in 'Sydney' and contains 1 image. The image details include a digest of '396f2b181a98', a manifest type of 'Docker', a size of 487 MB, and a security status of 'Unscanned'.

| 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



9. Upload Demo Video

Google Drive Link:

https://drive.google.com/file/d/1_wCvtLk7l9aGg1tbrEC7XlHUOrRggq9f/view?usp=sharing