

ASSIGNMENT 4

DOCKER AND KUBERNETES

1.Pull an Image from docker hub and run it in docker playground.

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

Top Screenshot:

- Instances:** Shows a single instance named "node1" with IP 192.168.0.28.
- Instance Details:** For instance "cdnpl7n9_cdnpl8v91rrg00b40r9g", the IP is 192.168.0.28. Memory usage is 12.22% (488.9MiB / 3.906GiB). CPU usage is 289.82%.
- Terminal:** Shows the command `$ docker pull nikhileshwari/cad` being executed. The output indicates the image is being pulled from Docker Hub, showing progress bars for various layers (e.g., 45.12MB/54.92MB).

Bottom Screenshot:

- Instances:** Shows the same instance "node1" with IP 192.168.0.28.
- Instance Details:** For instance "cdnpl7n9_cdnpl8v91rrg00b40r9g", the IP is 192.168.0.28. Memory usage is 31.66% (1.237GiB / 3.906GiB). CPU usage is 0.48%.
- Terminal:** Shows the command `$ docker run -p 5000:5000 nikhileshwari/cad` being executed. The output indicates the image is being pulled (e.g., 5e3b1213efc5: Pull complete). The container is running, serving a Flask app on port 5000. The terminal output includes warnings about production usage and debug mode.

X

03:56:43

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.28
node1

cdnpl7n9_cdnpl8v91rrg00b40r9g

IP: 192.168.0.28 OPEN PORT 5000

Memory: 31.68% (1.238GiB / 3.906GiB) CPU: 0.10%

SSH: ssh ip172-18-0-30-cdnpl7n91rrg00b40r90@direct.labs.play-with-docker.com

DELETE EDITOR

```
c4f42be2be53: Pull complete
263d55122db6: Pull complete
300f687463d8: Pull complete
ad9809193a49: Pull complete
e6f7992a1980: Pull complete
b9df223b89f9: Pull complete
Digest: sha256:893fbf4b4d7d99ea3dfeab5d4ba4529d1a00d35dfc0bd9184fb0895a96cecbf8
Status: Downloaded newer image for nikhileshwari/cad:latest
docker.io/nikhileshwari/cad:latest
(node1) (local) root@192.168.0.28 ~
$ docker run -p 5000:5000 nikhileshwari/cad
* 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 all addresses.
* WARNING: This is a development server. Do not use it in a production deployment.
* Running on http://172.17.0.2:5000/ (Press CTRL+C to quit)
172.18.0.1 - - [12/Nov/2022 13:12:29] "GET / HTTP/1.1" 404 -
172.18.0.1 - - [12/Nov/2022 13:12:29] "GET /favicon.ico HTTP/1.1" 404 -
172.18.0.1 - - [12/Nov/2022 13:12:36] "GET / HTTP/1.1" 404 -
```

Type here to search

27°C Cloudy

18:40 12-11-2022

ip172-18-0-30-cdnpl7n91rrg00b40r90-5000.direct.labs.play-with-docker.com/register

ASSIGNMENT 2

REGISTRATION

Enter username:

Enter mail:

Enter password:

2.Create a docker file for the jobportal application and deploy it in Docker desktop application.

```
Command Prompt
Error response from daemon: manifest for icr.io/inv_final/testrepo:latest not found: manifest unknown: manifest unknown

C:\Users\Bhuvaneshwari>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/

C:\Users\Bhuvaneshwari>ibm cr login
'ibm' is not recognized as an internal or external command,
operable program or batch file.

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

C:\Users\Bhuvaneshwari>docker pull icr.io/inv_final/testrepo
Using default tag: latest
Error response from daemon: manifest for icr.io/inv_final/testrepo:latest not found: manifest unknown: manifest unknown

C:\Users\Bhuvaneshwari>docker pull icr.io/inv_final/testrepo:inventory
Inventory: Pulling from inv_final/testrepo
Digest: sha256:893fbf4bd7d99ea3d9aeb5d4ba4529d1a00d35dfc0b49184fb0895a96cecbf8
Status: Image is up to date for icr.io/inv_final/testrepo:inventory
icr.io/inv_final/testrepo:inventory

C:\Users\Bhuvaneshwari>
```

```
Command Prompt - docker push icr.io/inv_final/testrepo:inventory
C:\Users\Bhuvaneshwari>docker pull nikhileshwari/cad
Using default tag: latest
latest: Pulling from nikhileshwari/cad
Digest: sha256:893fbf4bd7d99ea3d9aeb5d4ba4529d1a00d35dfc0b49184fb0895a96cecbf8
Status: Image is up to date for nikhileshwari/cad:latest
docker.io/nikhileshwari/cad:latest

C:\Users\Bhuvaneshwari>docker tag cad icr.io/inv_final/testrepo:inventory

C:\Users\Bhuvaneshwari>docker tag cad au.icr.io/inv_final/testrepo:inventory

C:\Users\Bhuvaneshwari>docker tag cad icr.io/inv_contreg/testrepo:inventory

C:\Users\Bhuvaneshwari>docker push icr.io/inv_final/testrepo:inventory
The push refers to repository [icr.io/inv_final/testrepo]
c531fba4c0c9: Pushing 2.048kB
0767820a4f78: Pushing [>] 545.3kB/176.2MB
f1f5361f6233: Pushing [=====] 2.56kB
a1e83e600809: Pushing [=====>] 121.3kB/942.7kB
12bb6b2b05bc: Pushing 2.048kB
aa4c808c19f6: Waiting
8ba9f690e8ba: Waiting
8e07d50ef9f: Waiting
1c10e7e1fcc2: Waiting
c3a0d593ed24: Waiting
26a504e63be4: Waiting
8bf42b0de72: Waiting
11892cc314cb: Waiting
11936051f93b: Waiting
```

Command Prompt

```
C:\Users\Bhuvaneshwari>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/

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

C:\Users\Bhuvaneshwari>docker pull cad
Using default tag: latest
Error response from daemon: pull access denied for cad, repository does not exist or may require 'docker login': denied: requested access to the resource is denied

C:\Users\Bhuvaneshwari>docker pull romantic_agnesi
Using default tag: latest
Error response from daemon: pull access denied for romantic_agnesi, repository does not exist or may require 'docker login': denied: requested access to the resource is denied

C:\Users\Bhuvaneshwari>docker pull nikhileshwari/cad
Using default tag: latest
latest: Pulling from nikhileshwari/cad
Digest: sha256:8937b4b4d7d99ea3dfe35d4ba4529d1a00d354fc0b09184fb0895a96cecbf0
Status: Image is up to date for nikhileshwari/cad:latest
docker.io/nikhileshwari/cad:latest

C:\Users\Bhuvaneshwari>
```

Docker Desktop

Containers

A container packages up code and its dependencies so the application runs quickly and reliably from one computing environment to another. [Learn more](#)

Showing 7 items

	NAME	IMAGE	STATUS	PORT(S)	STARTED	ACTIONS
<input type="checkbox"/>	nostalgic_poltras 5e99372841c5	nikhileshwari:latest	Exited	5000		▶ ⋮ 🗑
<input type="checkbox"/>	naughty_yalow 8b8cd4e7258e	nikhileshwari:latest	Created (128)	5000		▶ ⋮ 🗑
<input type="checkbox"/>	nervous_franklin 94e7cdf5f5eb	nikhileshwari:latest	Created (128)	5000		▶ ⋮ 🗑
<input type="checkbox"/>	confident_poincare 1d0df5b5b5f6	nikhileshwari:latest	Created (128)	5000		▶ ⋮ 🗑
<input type="checkbox"/>	hungry_payne 3889af9c71bb	nikhileshwari:latest	Exited	5000		▶ ⋮ 🗑
<input type="checkbox"/>	gifted_elion 48def5022c0b	<none><none>	Exited	5000		▶ ⋮ 🗑
<input type="checkbox"/>	romantic_agnesi 460b50a20c37	<none><none>	Exited (137)	5000		▶ ⋮ 🗑

RAM 2.14GB CPU 0.22% Connected to Hub v4.12.0

3.Create a IBM container registry and deploy helloworld app or jobportalapp.

```
Command Prompt
C:\Users\Bhuvaneshwari>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/

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

C:\Users\Bhuvaneshwari>docker pull cad
Using default tag: latest
Error response from daemon: pull access denied for cad, repository does not exist or may require 'docker login': denied: requested access to the resource is denied

C:\Users\Bhuvaneshwari>docker pull romantic_agnesi
Using default tag: latest
Error response from daemon: pull access denied for romantic_agnesi, repository does not exist or may require 'docker login': denied: requested access to the resource is denied

C:\Users\Bhuvaneshwari>docker pull nikhileshwari/cad
Using default tag: latest
latest: Pulling from nikhileshwari/cad
Digest: sha256:8937b4bd7d99ea3dfe55d4ba4529d1a00d354fc0bd9184fb0895a96cecbf0
Status: Image is up to date for nikhileshwari/cad:latest
docker.io/nikhileshwari/cad:latest

C:\Users\Bhuvaneshwari>
```

```
Command Prompt
Adding namespace 'inv_contreg' in resource group 'Default' for account Nikhileshwari S's Account in registry icr.io...
The requested namespace is already owned by your account.

C:\Users\Bhuvaneshwari>ibmcloud cr namespace-add inv_final
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.
Adding namespace 'inv_final' in resource group 'Default' for account Nikhileshwari S's Account in registry icr.io...
Successfully added namespace 'inv_final'

C:\Users\Bhuvaneshwari>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/

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

C:\Users\Bhuvaneshwari>
```

```
Command Prompt - docker push icr.io/inv_final/testrepo:inventory
C:\Users\Bhuvaneshwari>docker pull nikhilleshwari/cad
Using default tag: latest
latest: Pulling from nikhilleshwari/cad
Digest: sha256:893fb4b4d7d99ea3d9a5d4ba4529d1a00d35dfc0bd9184fb0895a96cecbf8
Status: Image is up to date for nikhilleshwari/cad:latest
docker.io/nikhilleshwari/cad:latest

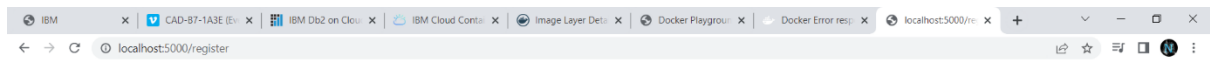
C:\Users\Bhuvaneshwari>docker tag cad icr.io/inv_final/testrepo:inventory
C:\Users\Bhuvaneshwari>docker tag cad au.icr.io/inv_final/testrepo:inventory
C:\Users\Bhuvaneshwari>docker tag cad icr.io/inv_contreg/testrepo:inventory
C:\Users\Bhuvaneshwari>docker push icr.io/inv_final/testrepo:inventory
The push refers to repository [icr.io/inv_final/testrepo]
c531fbadc0c9: Pushing [2.048kB] 545.3kB/176.2MB
978730ad4f78: Pushing [2.56kB] 2.56kB
f1f5361f6233: Pushing [2.56kB] 2.56kB
a1e83c600809: Pushing [2.048kB] 121.3kB/942.7kB
32bb6b2b05bc: Pushing [2.048kB] 2.048kB
aad4c88c19f6: Waiting
8ba9f690e08a: Waiting
9e607d59ef9f: Waiting
1e18e7efcc2: Waiting
c3a0d593ed24: Waiting
2d504ed3be4: Waiting
8bf42db0de72: Waiting
31892cc314cb: Waiting
11936051f93b: Waiting
```

```
Command Prompt
Microsoft Windows [Version 10.0.19045.2130]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Bhuvaneshwari>ibmcloud plugin list
Listing installed plug-ins...

Plugin Name      Version  Status  Private endpoints supported
container-registry 1.0.2    true    true
container-service[kubernetes-service/ks] 1.0.459 false   false
observe-service[ob] 1.0.82   false   false

C:\Users\Bhuvaneshwari>
```



ASSIGNMENT 2

REGISTRATION

Enter username:

Enter mail:

Enter password:



4. Create a Kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run in nodeport.

IBM Cloud Container | mycluster-free - Kube | IBM-Project-10292-1 | Labels and Selectors | How to write YAML fi | Understanding Kube | nikhileshwari/cad - D | +

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdobo6qf0q64hjhlvl0/service/#/pod?namespace=default

kubernetes default Search

Workloads > Pods

Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods**
- Replica Sets
- Replication Controllers
- Stateful Sets

Service

- Ingresses
- Ingress Classes
- Services

Config and Storage

- Config Maps
- Persistent Volume Claims
- Secrets

Storage Classes

CPU Usage

Waiting for more data to display chart...

Memory Usage

Waiting for more data to display chart...

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
flask-85f7bc775f-14shf	nikhileshwari/cad	k8s-app: flask pod-template-hash: 85f7bc775f	10.144.222.151	Running	0	1.80m	31.14Mi	2 minutes ago

Service Details - IBM Cloud | IBM Db2 on Cloud | mycluster-free - Kubernetes Dashboard | Use a Service to Access an Appli | How to Create, View, and Destro | +

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdobo6qf0q64hjhlvl0/service/#/pod?namespace=default

kubernetes default Search

Workloads > Pods

Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods**
- Replica Sets
- Replication Controllers
- Stateful Sets

Service

- Ingresses
- Ingress Classes
- Services

Config and Storage

- Config Maps
- Persistent Volume Claims
- Secrets

Storage Classes

CPU Usage

Memory Usage

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
hello-world-87998c56d-4jdg	Show all	Show all	10.144.222.151	Running	0	0.00m	9.11Mi	14 minutes ago
hello-world-87998c56d-w6ldm	Show all	Show all	10.144.222.151	Running	0	0.00m	9.06Mi	14 minutes ago
flask-85f7bc775f-14shf	Show all	Show all	10.144.222.151	Running	0	1.80m	31.14Mi	26 minutes ago

Service Details - IBM Cloud

IBM Db2 on Cloud

mycluster-free - Kubernetes Das

Use a Service to Access an Appli

(1) New Messages!

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdobo6qf0q64hjhfiv0/service/#/service?namespace=default

kubernetes

default

Search

+ 🔔 👤

Service > Services

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Secrets

Services

Name	Labels	Type	Cluster IP	Internal Endpoints	External Endpoints	Created
kubernetes	<div>component: apiserver</div> <div>provider: kubernetes</div> <div>Show less</div>	ClusterIP	172.21.0.1	kubernetes:443 TCP kubernetes:0 TCP	-	2.days ago

Storage Classes

Type here to search

Command Prompt

Microsoft Windows [Version 10.0.19045.2130]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Bhuvaneswar>ibmcloud plugin list
Listing installed plug-ins...

Plugin Name	Version	Status	Private endpoints supported
container-registry	1.0.2	true	true
container-service[kubernetes-service/ks]	1.0.459	false	false
observe-service[ob]	1.0.82	false	false

C:\Users\Bhuvaneswar>

Type here to search

27°C Partly cloudy 19:25 15-11-2022