

Assignment -4

Docker and Kubernetes

1.Pull an image from docker hub and run it in docker Playground.

The screenshot shows the Docker Playground interface. On the left, there's a sidebar with a clock showing 03:58:45, a 'CLOSE SESSION' button, and an 'Instances' section with a '+ ADD NEW INSTANCE' button. Below this, a list of instances shows '192.168.0.18 node1'. The main area displays details for a container named 'cdhtqrm3_cdhtqte3tccg00fmtje0'. It shows the IP '192.168.0.18', memory usage '1.63% (65.19MiB / 3.90GiB)', and CPU usage '0.16%'. There's an 'OPEN PORT' button set to '9000'. Below this, a terminal window shows the following commands and output:

```
wait Block until one or more containers stop, then print their exit codes
Run 'docker COMMAND --help' for more information on a command.

To get more help with docker, check out our guides at https://docs.docker.com/go/guides/
[node1] (local) root@192.168.0.18 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
841194d080e8: Pull complete
Digest: sha256:fe371ff5a69549269b24073a5ab1244dd4c0b834ebadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[node1] (local) root@192.168.0.18 ~
$ docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
1c759ed73863a957fad6fba18edbe6388eed7ad0b867b0eacb15e722e10e4bb9
[node1] (local) root@192.168.0.18 ~
$
```

The screenshot shows the 'UI For Docker' application interface. At the top, there's a navigation bar with tabs: 'Dashboard', 'Containers', 'Containers Network', 'Images', 'Networks', 'Volumes', and 'Info'. A 'Refresh' button is on the right. Below the navigation bar, the 'Running Containers' section shows a list of containers with one entry: 'hungry_ferret' with a status of 'Up 14 seconds'. To the right, a 'Status' section features a donut chart showing 'Running' (green) and 'Stopped' (red) containers. Below this, there are two line graphs: 'Containers created' and 'Images created', both showing a count of 1 over time. The bottom of the interface shows a Windows taskbar with the system clock at 8:56 PM on 11/3/2022.

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

IBM Cloud Container Registry - New Tab

cloud.ibm.com/registry/namespaces

Search resources and products...

Container Registry

Quick start

Namespaces 2

Repositories 1

Images 1

Trash 0

Settings

Namespaces

Location

Global

Resource group: Filter... Search Create +

<input type="checkbox"/>	Name	Resource group	Repository count	Image count	Retention policy	
<input checked="" type="checkbox"/>	jobportalap	Default	1	1	Retain all images	:
<input type="checkbox"/>	jobportalapplication	Default	0	0	Retain all images	:

Items per page: 25 1-2 of 2 items 1 1 of 1 page

Type here to search

23°C Partly cloudy 1:43 AM 11/7/2022

IBM Cloud Container Registry - New Tab

cloud.ibm.com/registry/repos

Search resources and products...

Container Registry

Quick start

Namespaces 2

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Settings

Repositories

Location

Global

Search Create +

<input type="checkbox"/>	Name	Image count	Namespace	Last updated	
<input checked="" type="checkbox"/>	testrepo icr.io/jobportalap/testrepo	1	jobportalap	3 days ago	:

Items per page: 25 1-1 of 1 item 1 1 of 1 page

Type here to search

23°C Partly cloudy 1:43 AM 11/7/2022

```
Command Prompt - docker run -p 4000:4000 icr.io/jobportalap/testrepo@sha256:ef3608d0cf4c21ce5e9c5e42caa10349538d25697a6e8660476a5b5558c89898
11936051f93b: Layer already exists
jobportaltest: digest: sha256:ef3608d0cf4c21ce5e9c5e42caa10349538d25697a6e8660476a5b5558c89898 size: 3259

C:\Users\User> ibmcloud cr image-list
Listing images...

Repository      Tag      Digest      Namespace      Created      Size      Security status
icr.io/jobportalap/testrepo  jobportaltest  ef3608d0cf4c  jobportalap  3 days ago  435 MB  -

OK

C:\Users\User> docker run -p 5070:5070 icr.io/jobportalap/testrepo
Unable to find image 'icr.io/jobportalap/testrepo:latest' locally
docker: Error response from daemon: manifest for icr.io/jobportalap/testrepo:latest not found: manifest unknown: manifest unknown.
See 'docker run --help'.

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

C:\Users\User> docker run -p 4000:4000 icr.io/jobportalap/testrepo@sha256:ef3608d0cf4c21ce5e9c5e42caa10349538d25697a6e8660476a5b5558c89898
* 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)
```

4. Create a Kubernetes cluster in IBM cloud and deploy hello world image and also expose the same app to run in node port.

The screenshot displays the IBM Cloud Kubernetes Dashboard for a cluster named 'mycluster-free'. The interface includes a sidebar with navigation options like 'Overview', 'Worker nodes', 'Worker pools', and 'DevOps'. The main content area shows the cluster's status, including a warning that the cluster will expire in 30 days. Key status metrics are displayed: 1 of 1 Node status (Pending), 0 of 0 Add-on status (Normal), Unknown Master status, and Pending Ingress status. A 'Details' section provides information about the cluster ID, version (1.24.7_1542), infrastructure (Classic), zones (Milan 01), creation time (11/7/2022, 3:00 AM), resource group, and image security enforcement (with an 'Enable' button).

Node status	Add-on status	Master status	Ingress status
1 of 1 Pending	0 of 0 Normal	Unknown	Pending

Cluster ID	Version	Infrastructure	Zones
cdk2eopf0u0ekek	1.24.7_1542	Classic	Milan 01

Created	Resource group	Image security enforcement
11/7/2022, 3:00 AM		Enable

mycluster-free - IBM Cloud

Inbox (10) - devamaha632@...

IBM-Project-40862-1660636

Getting Started with Kubernetes

Install and Set Up kubect...

cloud.ibm.com/kubernetes/clusters/cdk2eopf0u0ekek974e0/nodes

IBM Cloud

Search resources and products...

Catalog

Manage

Mahadevan M's Account

Clusters /

mycluster-free

Help

Kubernetes dashboard

Actions...

Preparing master, workers...

Expires in 30 days

Add tags

Overview

Worker nodes

Worker pools

DevOps New

Search

Name	Status	Worker pool	Zone	Private IP	Public IP
000000d9	Normal	default	Milan 01	10.144.194.66	169.51.205.176

Items per page: 25 1-1 of 1 item 1 1 of 1 page

Help

Log in to your cluster

Deploy your app

Expose your app

Add storage to your app

Connect integrations

Install add-ons

Troubleshoot

Type here to search

23°C Mostly clear

3:16 AM 11/7/2022