

ASSIGNMENT-4

DOCKER AND KUBERNETES

Assignment Date	30 October 2022
Student Name	Prateek.M
Student Roll Number	311419106022
Maximum Marks	2 Marks

- 1.Pull an Image from docker hub and run it in docker playground.
- 2.Create a docker file for the jobportal application and deploy it in Docker desktop application.
- 3.Create a IBM container registry and deploy helloworld app or jobportalapp.
- 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.

```
C:\Users\Admin>ibmcloud cr region
You are targeting region 'global', the registry is 'icr.io'.

OK

C:\Users\Admin>docker tag hello-world:latest uk.icr.io/namespace1/hw_repo:1

C:\Users\Admin>docker tag hello-world:latest icr.io/elizabeth/helloworld:1

C:\Users\Admin>docker push icr.io/elizabeth/helloworld:1
The push refers to repository [icr.io/elizabeth/helloworld]
e07ee1baac5f: Preparing
unauthorized: The login credentials are not valid, or your IBM Cloud account is not active.

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

OK

C:\Users\Admin>docker push icr.io/elizabeth/helloworld:1
The push refers to repository [icr.io/elizabeth/helloworld]
e07ee1baac5f: Pushed
1: digest: sha256:f54a58bc1aac5ea1a25d796ae155dc228b3f0e11d046ae276b39c4bf2f13d8c4 size: 525

C:\Users\Admin>
```

to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
\$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
<https://hub.docker.com/>

For more examples and ideas, visit:
<https://docs.docker.com/get-started/>

```
[node1] (local) root@192.168.0.8 ~  
$
```

```
[node1] (local) root@192.168.0.8 ~  
$ docker pull hello-world:latest  
latest: Pulling from library/hello-world  
2db29710123e: Pull complete  
Digest: sha256:e18f0a777aefabe047a671ab3ec3eed05414477c951ab1a6f352a06974245fe7  
Status: Downloaded newer image for hello-world:latest  
docker.io/library/hello-world:latest  
[node1] (local) root@192.168.0.8 ~  
$ docker run hello-world
```

Hello from Docker!

This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:

1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
(amd64)
3. The Docker daemon created a new container from that image which runs the executable that produces the output you are currently reading.
4. The Docker daemon streamed that output to the Docker client, which sent it to your terminal.

```
#####  
#                               #  
#           WARNING!!!!        #  
# This is a sandbox environment. Using personal credentials #  
# is HIGHLY! discouraged. Any consequences of doing so are #  
# completely the user's responsibilities.                    #  
#                               #  
# The PWD team.                                                #  
#####  
[node1] (local) root@192.168.0.8 ~  
$ docker pull hello-world:latest  
latest: Pulling from library/hello-world  
2db29710123e: Pull complete  
Digest: sha256:e18f0a777aefabe047a671ab3ec3eed05414477c951ab1a6f352a06974245fe7  
Status: Downloaded newer image for hello-world:latest  
docker.io/library/hello-world:latest  
[node1] (local) root@192.168.0.8 ~  
$ docker run hello-world
```

Hello from Docker!

This message shows that your installation appears to be working correctly.

DOCKER FILE:
FROM nginx
COPY . /usr/share/nginx/html
EXPOSE 80

The screenshot shows the Docker Desktop interface. The left sidebar contains navigation options: Containers, Images, Volumes, Dev Environments (BETA), Extensions (BETA), and Add Extensions. The main panel displays the logs for a container named 'jobportal' (ID: 66814dca3f54) which is in a 'RUNNING' state. The logs show the container's startup sequence, including the configuration of the nginx entrypoint, the enabling of IPv6 listening, and the start of the nginx worker processes. The logs also show a failed attempt to access a file 'favicon.ico' from the local host. The bottom status bar indicates that the system is connected to the Docker Hub, with 1.72GB of RAM and 0.61% CPU usage.

```
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2022/10/29 16:55:54 [notice] 1#1: using the "epoll" event method
2022/10/29 16:55:54 [notice] 1#1: nginx/1.23.2
2022/10/29 16:55:54 [notice] 1#1: built by gcc 10.2.1 202110110 (Debian 10.2.1-6)
2022/10/29 16:55:54 [notice] 1#1: OS: Linux 5.10.16.3-microsoft-standard-WSL2
2022/10/29 16:55:54 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2022/10/29 16:55:54 [notice] 1#1: start worker processes
2022/10/29 16:55:54 [notice] 1#1: start worker process 29
2022/10/29 16:55:54 [notice] 1#1: start worker process 30
2022/10/29 16:55:54 [notice] 1#1: start worker process 31
2022/10/29 16:55:54 [notice] 1#1: start worker process 32
172.17.0.1 - - [29/Oct/2022:16:56:05 +0000] "GET / HTTP/1.1" 200 2166 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/107.0.0.0 Safari/537.36 Edg/107.0.1418.24" "-"
2022/10/29 16:56:16 [error] 2#29: "1 open() "/usr/share/nginx/html/favicon.ico" failed (2: No such file or directory), client: 172.17.0.1, server: localhost, request: "GET /favicon.ico HTTP/1.1", host: "localhost:8080", referer: "http://localhost:8080/"
172.17.0.1 - - [29/Oct/2022:16:56:16 +0000] "GET /favicon.ico HTTP/1.1" 404 555 "http://localhost:8080/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/107.0.0.0 Safari/537.36 Edg/107.0.1418.24" "-"
```

RAM 1.72GB CPU 0.61% Connected to Hub v4.13.0

Containers Give feedback

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


☐ Only show running containers

Search


	NAME	IMAGE	STATUS	PORT(S)	STARTED	ACTIONS
<input type="checkbox"/>	jobportal 66814dca3f54	getting-started:latest	Running	8080:80	52 seconds ago	



Showing 1 items

RAM 1.72GB CPU 0.42% Connected to Hub v4.13.0


 **kubernetes**

default

 Search

+  

Workloads > Deployments

Workloads 

Cron Jobs

Daemon Sets

Deployments

Jobs


Pods

Replica Sets


Replication Controllers


Stateful Sets

Service


Ingresses 

Ingress Classes

Services 


CPU Usage 


Waiting for more data to display chart...

Memory Usage 


Waiting for more data to display chart...



Deployments

Name	Images	Labels	Pods	Created
 jobportal	Show all	Show all	1 / 1	4m


 **kubernetes**

default

 Search

+  

Workloads

Workloads 

Cron Jobs

Daemon Sets

Deployments

Jobs


Pods

Replica Sets


Replication Controllers

Stateful Sets


Service


Ingresses 


Ingress Classes


Services 

Config and Storage

Workload Status 


Running: 1
Deployments


Running: 1
Pods



Running: 1
Replica Sets

Deployments

Name	Images	Labels	Pods	Created
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←↻🔒https://eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdem890f06aoio4mggvg/service/#/discovery?namespace=default

(3) WhatsApp🔊 Build an Awesome...🔊 Digital to Analog E...📄 Untitled document...📄 ESP8266 NodeMCU...🔊 Reminder: FABLAB...🌐 https://www.skillrac...📄 Submission form : F...>

kubernetes

default

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Service

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses N

Ingress Classes

Services N



Config and Storage

Config Maps N

Persistent Volume Claims N

Secrets N

Services

Name	Labels	Type	Cluster IP	Internal Endpoints	External Endpoints
 jobportal	Show all	NodePort	172.21.202.31	jobportal:80 TCP jobportal:30380 TCP	-
 kubernetes	Show all	ClusterIP	172.21.0.1	kubernetes:443 TCP kubernetes:0 TCP	-

https://eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdem890f06aoio4mggvg/service/#/pod?namespace=default