

ASSIGNMENT-4

DOCKER AND

KUBERNETES

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 image shows two screenshots of the Docker Desktop application. The top screenshot displays the 'Logs' tab for a container named 'jobportal'. The logs show the container's startup sequence, including the entrypoint script, configuration checks, and the start of the nginx service. The bottom screenshot shows the 'Containers' tab, which lists the 'jobportal' container as 'Running' with the image 'getting-started:latest' and port '8080:80' exposed. The interface includes a sidebar with navigation options like 'Containers', 'Images', 'Volumes', and 'Dev Environments'. The bottom status bar indicates system resources (RAM, CPU) and connection to the Docker Hub.

Logs:


```
/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
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /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 20210110 (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] 29#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" "-"
```



Containers:

NAME	IMAGE	STATUS	PORT(S)	STARTED	ACTIONS
jobportal 66814dca3f54	getting-started:latest	Running	8080:80	52 seconds ago	[Stop] [Restart] [Logs] [Delete]


 **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**

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 Search

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Workloads

Workloads 

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

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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/cdem890f06aoio4mgvgv/service/#/discovery?namespace=default

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(3) WhatsApp

🗨️ Build an Awesome...

🌱 Digital to Analog E...

📄 Untitled document...


📄 ESP8266 NodeMCU...

🔔 Reminder: FABLAB...

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📄 Submission form : F...

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🔍 Search

+

🔔

👤

☰ 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/cdem890f06aoio4mgvgv/service/#/pod?namespace=default