

# Assignment - 4

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## Docker and Kubernetes

### 1) Pull Image from docker hub and run in docker Playground

03:57:06

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.13  
node1

ce0er1e3\_ce0er3m3tccg009im0u0

IP  
192.168.0.13

OPEN PORT

Memory  
31.26% (1.221GiB / 3.906GiB)

CPU  
0.13%

SSH  
ssh ip172-18-0-6-ce0er1e3tccg009im0tg@direct.labs.play-w

DELETE

EDITOR

```
#####
#                               #
#      WARNING!!!!             #
#  This is a sandbox environment. Using personal credentials   #
#  is HIGHLY! discouraged. Any consequences of doing so are    #
#  completely the user's responsibilities.                       #
#  The FWD team.                                                #
#####
(node1) (local) root@192.168.0.13 ~
$ docker pull ashmn07/ibm:latest
latest: Pulling from ashmn07/ibm
a8ca11584fee: Pull complete
e4e46864aba2: Pull complete
c85a0be79bfb: Pull complete
195ea6a58ca8: Pull complete
157f16ed0a0c: Pull complete
884b144bec28: Pull complete
dc4ed63cc6ae: Pull complete
aa6a7fd543b: Pull complete
42aabb4354c6: Pull complete
70e5b60c404c: Pull complete
ee64ad27da4f: Pull complete
f01df2566d79: Pull complete
b5b5a9ce9217: Pull complete
84fd5ffd1e53: Pull complete
Digest: sha256:02d75ed6e03b6378c422b41cac6f0ed930e79946ac58b5d24e2c326781970f7
Status: Downloaded newer image for ashmn07/ibm:latest
docker.io/ashmn07/ibm:latest
(node1) (local) root@192.168.0.13 ~
$
```

## 2)Running Docker in Docker Hub

```
Project Development Phase > Sprint 4 > Dockerfile > ...
You, 22 hours ago | 1 author (You)
1 FROM python:3.9
2 WORKDIR /app
3 COPY requirements.txt ./
4 RUN pip install --upgrade pip setuptools
5 RUN python -m pip install -r requirements.txt
6 COPY . .
7 EXPOSE 5000
8 CMD ["python", "./app.py"]
```

```
ashmn07@ashmn07:~$ docker run -d -p 5000:5000 ashmn07/ibm
fff3b3373362f2d2439c9f318f0159b493b06c7355da42d0be5e2020cc1d9b05
ashmn07@ashmn07:~$ docker ps
CONTAINER ID   IMAGE                                COMMAND                  Status              Ports
fff3b3373362f2d2439c9f318f0159b493b06c7355da42d0be5e2020cc1d9b05   ashmn07/ibm:latest   python ./app.py         Up 22 hours ago    5000->5000
```

Docker Desktop Upgrade plan

Search **Ctrl+K** ashmn07

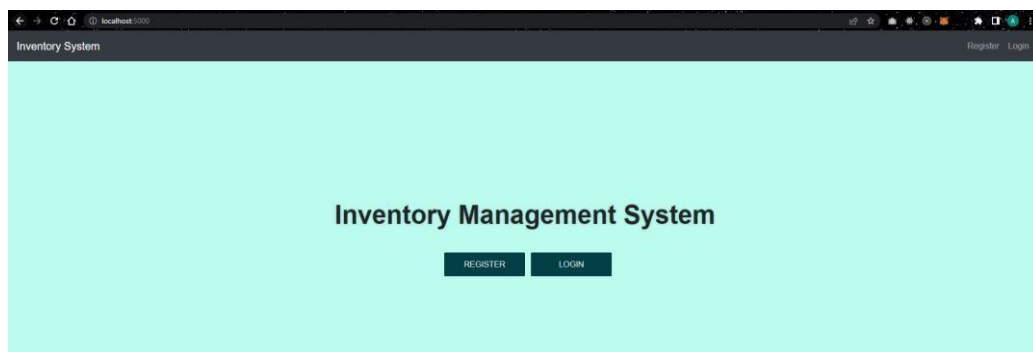
Containers [Give feedback](#)

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

	NAME	IMAGE	STATUS	PORT(S)	STARTED	ACTIONS
<input type="checkbox"/>	loving_kepler 957bc90b6f8b	ashmn07/ibm:latest	Exited (137)	5000:5000		<a href="#">▶</a> <a href="#">⋮</a> <a href="#">🗑</a>
<input type="checkbox"/>	zealous_shirley fff3b3373362	ashmn07/ibm:latest	Running	5000:5000	1 minute ago	<a href="#">■</a> <a href="#">⋮</a> <a href="#">🗑</a>

Showing 2 items



### 3)Ibm container Registry

```
ibmcloud plugin install cloud-object-storage
Looking up 'cloud-object-storage' from repository 'IBM Cloud'...
Plug-in 'cloud-object-storage 1.6.0' found in repository 'IBM Cloud'
Attempting to download the binary file...
 16.58 MiB / 16.58 MiB [=====] 100.00% 1s
17383936 bytes downloaded
Installing binary...
OK
Plug-in 'cloud-object-storage 1.6.0' was successfully installed into C:\Users\HP\.bluemix\plugins\cloud-object-storage. Use 'ibmcloud plugin object-storage' to show its details.
```

```
ibmcloud plugin install container-registry
Looking up 'container-registry' from repository 'IBM Cloud'...
Plug-in 'container-registry[cr] 1.0.2' found in repository 'IBM Cloud'
Attempting to download the binary file...
 11.90 MiB / 11.90 MiB [=====] 100.00% 0s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\HP\.bluemix\plugins\container-registry. Use 'ibmcloud plugin registry' to show its details.
```

```
ibmcloud plugin install container-service
Looking up 'container-service' from repository 'IBM Cloud'...
Plug-in 'container-service[kubernetes-service/ks] 1.0.459' found in repository 'IBM Cloud'
Attempting to download the binary file...
 26.86 MiB / 26.86 MiB [=====]
28168192 bytes downloaded
Installing binary...
OK
Plug-in 'container-service 1.0.459' was successfully installed into C:\Users\HP\.bluemix\plugins\container-service to show its details.
```

```
ibmcloud plugin install cloud-functions
Looking up 'cloud-functions' from repository 'IBM Cloud'...
Plug-in 'cloud-functions[wsk/functions/fn] 1.0.61' found in repository 'IBM Cloud'
Attempting to download the binary file...
 13.39 MiB / 13.39 MiB [=====]
14042112 bytes downloaded
Installing binary...
OK
Plug-in 'cloud-functions 1.0.61' was successfully installed into C:\Users\HP\.bluemix\plugins\cloud-functions to show its details.
```

```
ibmcloud plugin install schematics
Looking up 'schematics' from repository 'IBM Cloud'...
Plug-in 'schematics[sch] 1.12.4' found in repository 'IBM Cloud'
Attempting to download the binary file...
 20.71 MiB / 20.71 MiB [=====]
21714944 bytes downloaded
Installing binary...
OK
Plug-in 'schematics 1.12.4' was successfully installed into C:\Users\HP\.bluemix\plugins\schematics to show its details.
```

```
ibmcloud login
API endpoint: https://cloud.ibm.com

Email> 2019103510@student.annauniv.edu

Password>
Authenticating...
OK

Targeted account Ashwin Menon's Account (ec3f5949115b403aac122427e60b5b19)
```

```

[ docker pull ashmn07/ibm:latest
latest: Pulling from ashmn07/ibm
Digest: sha256:02d75ed6e0e3b6378c422b41cac6f0ed930e79946ac58b5d24e2c326781970f7
Status: Image is up to date for ashmn07/ibm:latest
docker.io/ashmn07/ibm:latest

```

```

[ docker tag ashmn07/ibm:latest icr.io/ibm_ns/ibm_inv:1
[ docker push icr.io/ibm_ns/ibm_inv:1
The push refers to repository [icr.io/ibm_ns/ibm_inv]
7a7d3e10e350: Pushed
2cbfc0d9efd8: Pushed
7b1e93651036: Pushed
b9850c37b9f1: Pushed
b520bfc1a3f1: Pushed
bdcd94073ef2: Pushed
c44cf16349ba: Pushed
22323d4bd802: Pushed
e6e9854ca999: Pushed
397a239a053b: Pushed
89c3244a87b2: Pushed
80231db1194c: Pushed
f1c1f2298584: Pushed
ccba29d69370: Pushed
1: digest: sha256:02d75ed6e0e3b6378c422b41cac6f0ed930e79946ac58b5d24e2c326781970f7 size: 3265
[ ibmcloud cr image-list
Listing images...

Repository          Tag    Digest          Namespace    Created      Size    Security status
icr.io/ibm_ns/ibm_inv 1      02d75ed6e0e3    ibm_ns       2 hours ago  448 MB  -

```

Container Registry

Quick start

Namespaces 1

Repositories 1

Images 1

Trash 0

Settings

Namespaces

Location

Global

Resource group: Filter...

Q Search

Create

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

Items per page: 25

1-1 of 1 item

1 1 of 1 page

Container Registry

Quick start

Namespaces 1

Repositories 1

Images 1

Trash 0

Settings

Images

Location

Global

View by: Digest

Q Search

<input type="checkbox"/>	Repository@digest	Tags	Manifest type	Created	Size
<input checked="" type="checkbox"/>	ibm_ns/ibm_inv@sha256:02d75ed6e0e3...	1	Docker	7 hours ago	448 MB

Items per page: 25

1-1 of 1 item

## 4)Kubernetes

The screenshot shows the 'Kubernetes clusters' management page. On the left is a sidebar with navigation links: 'Kubernetes', 'Clusters', 'Reservations', 'Helm catalog', and 'Container Registry'. The main area displays a table of clusters. The table has columns for Name, State, Location, Worker count, Created, Version, and Infrastructure. One cluster, 'ibm\_invs', is listed with a 'Normal' state, located in 'Paris 01', with 1 worker, created on '25/11/2022, 5:24 pm', running version '1.24.8\_1544', and using 'Classic' infrastructure. A red banner indicates it 'Expires in 30 days'. Below the table, there are filters for 'Items per page' (set to 25) and '1-1 of 1 item'.

Name	State	Location	Worker count	Created	Version	Infrastructure
ibm_invs	Normal	Paris 01	1	Expires in 30 days	1.24.8_1544	Classic

This screenshot shows the detailed view of the 'ibm\_invs' cluster. At the top, a warning banner states: 'Expires in 30 days: Be sure to back up your data, your cluster will be deleted in 30 days. To access the full capabilities of the service, try out a standard cluster.' The left sidebar shows navigation options: 'Overview' (selected), 'Worker nodes', 'Worker pools', and 'DevOps' (marked as 'New'). The main content area is divided into several sections: 'Node status' showing '1 of 1' nodes in 'Normal' state; 'Add-on status' showing '0 of 0' add-ons in 'Normal' state; 'Master status' showing 'Normal'; and 'Ingress status' showing 'Healthy'. Below these is a 'Details' section with a grid of key-value pairs: Cluster ID (ce8apgh8rq6mmk2fg@), Version (1.24.8\_1544), Infrastructure (Classic), Zones (Milan 01), Created (25/11/2022, 5:24 pm), and Resource group (Default). An 'Image security enforcement' toggle is set to 'Enable'. The 'Node health' section shows a bar chart for '1 total nodes' with a 100% 'Normal' status. The 'Networking' section shows the 'Service endpoint URL' as 'public endpoint' with a 'Copy link' button.

The screenshot displays the 'Create' form for a new Kubernetes resource. The left sidebar lists various resource types under categories like 'Workloads', 'Service', 'Config and Storage', and 'Cluster'. The 'Create from form' tab is active. The form fields include: 'App name' (set to 'ibm\_invs'), 'Container image' (set to 'ashmn07/ibm:latest'), 'Number of pods' (set to '1'), 'Service' (set to 'External'), 'Port' (set to '5000'), 'Target port' (set to '5000'), 'Protocol' (set to 'TCP'), and 'Namespace' (set to 'default'). Each field has a corresponding 'Learn more' link. At the bottom, there are buttons for 'Deploy', 'Preview', 'Cancel', and 'Show advanced options'.



