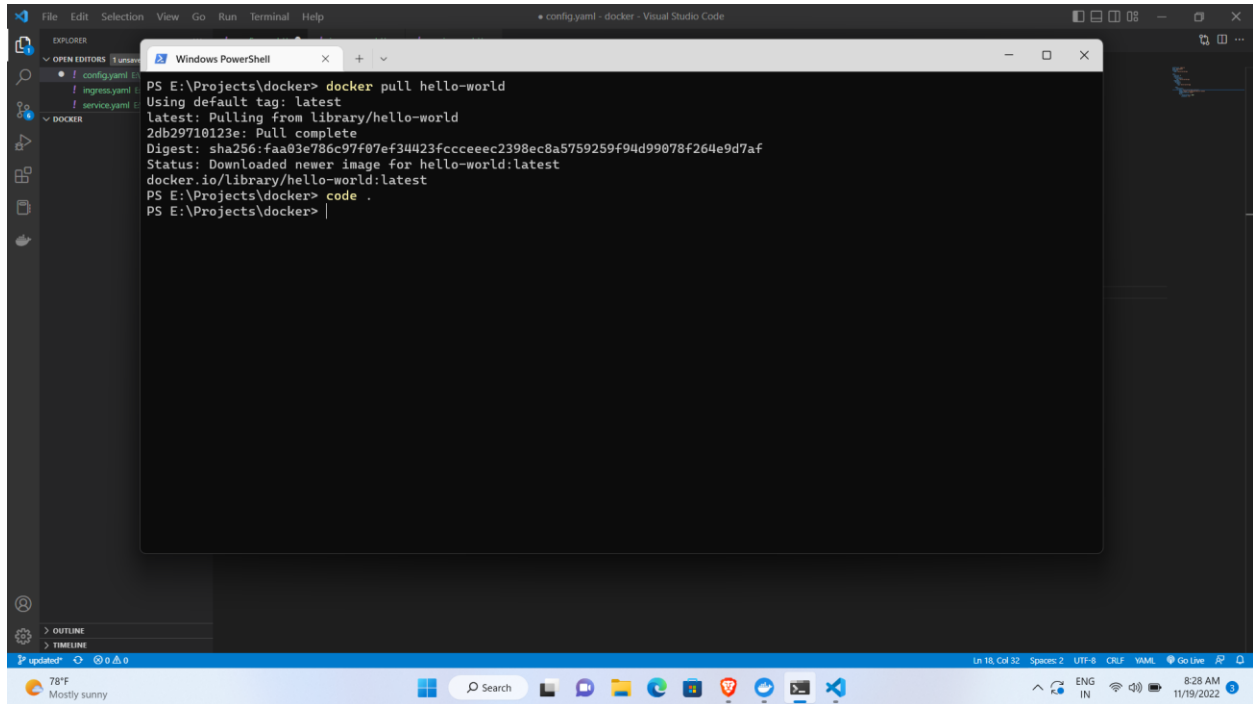


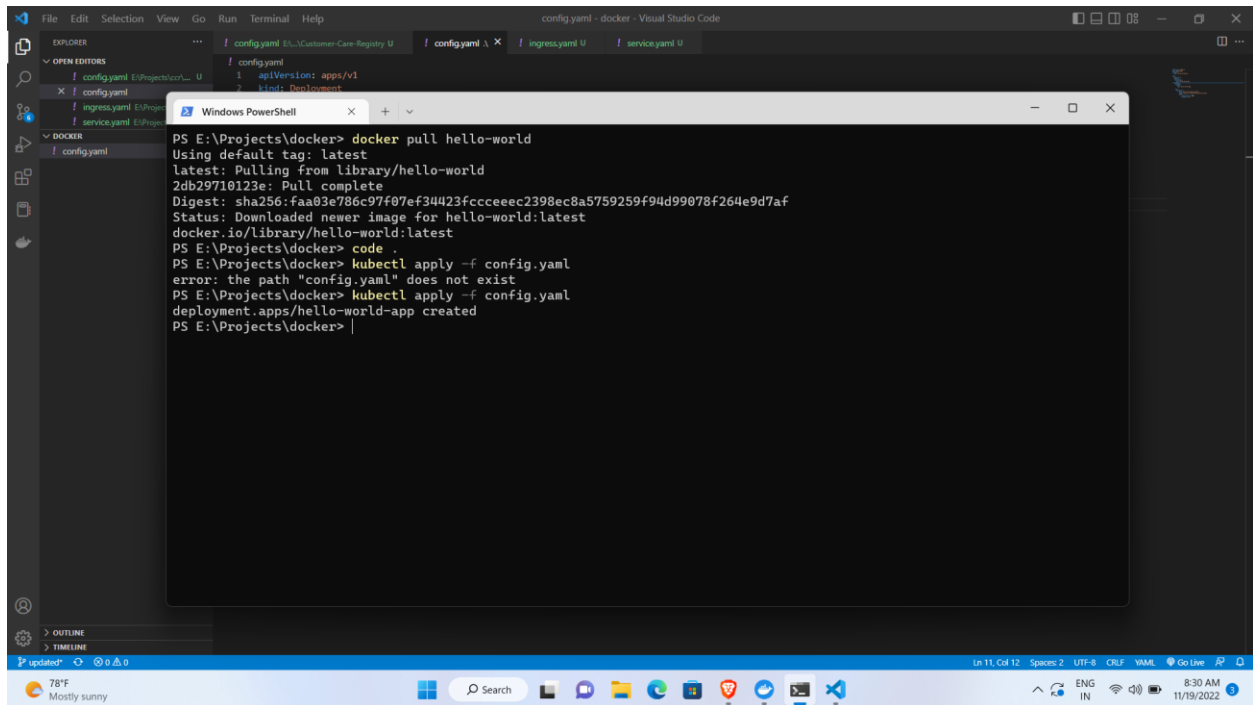
## Assignment Kubernetes / Docker

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



The screenshot shows a Visual Studio Code editor with a Windows PowerShell terminal window open. The terminal displays the following commands and output:

```
PS E:\Projects\docker> docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:faa03e786c97f07ef34423fccceec2398ec8a5759259f94d99078f264e9d7af
Status: Downloaded newer image for hello-world:latest
docker.io/library/hello-world:latest
PS E:\Projects\docker> code .
PS E:\Projects\docker> |
```



The screenshot shows a Visual Studio Code editor with a Windows PowerShell terminal window open. The terminal displays the following commands and output:

```
PS E:\Projects\docker> docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:faa03e786c97f07ef34423fccceec2398ec8a5759259f94d99078f264e9d7af
Status: Downloaded newer image for hello-world:latest
docker.io/library/hello-world:latest
PS E:\Projects\docker> code .
PS E:\Projects\docker> kubectl apply -f config.yaml
error: the path "config.yaml" does not exist
PS E:\Projects\docker> kubectl apply -f config.yaml
deployment.apps/hello-world-app created
PS E:\Projects\docker> |
```

The screenshot shows the Docker Playground web interface. On the left, there's a sidebar with a clock showing 03:59:07, a 'CLOSE SESSION' button, and a list of instances. The main area displays details for a container named 'cds50879\_cds50af91rrg00arp3b0'. It shows the IP address 192.168.0.28, memory usage of 1.22% (48.64MiB / 3.906GiB), and CPU usage of 0.51%. Below this, there's a terminal window showing the output of running 'docker run hello-world'. The output indicates that the Docker client contacted the daemon, which pulled the 'hello-world' image from the Docker Hub and created a new container to run the executable.

cds50879\_cds50af91rrg00arp3b0

IP: 192.168.0.28

Memory: 1.22% (48.64MiB / 3.906GiB)

CPU: 0.51%

SSH: ssh ip172-18-0-12-cds508791rrg00arp3a0@direct.labs.play

DELETED EDITOR

```
[node1] (local) root@192.168.0.28 ~
$ docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:faa03e786c97f07ef34423fccceec2398ec8a5759259f94d99078f264e9d7af
Status: Downloaded newer image for hello-world:latest

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.

To try something more ambitious, you can run an Ubuntu container with:
```

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

The screenshot shows the Visual Studio Code editor with a Dockerfile for the 'jobportal' application. The Dockerfile contains the following instructions:

```
FROM python:3.6
WORKDIR /app
ADD . /app
COPY requirements.txt /app
RUN python3 -m pip install -r requirements.txt
RUN python3 -m pip install ibm_db
EXPOSE 5000
CMD ["python", "app.py"]
```

The left sidebar shows the Explorer view with the following files and folders:

- EXPLORER
  - JOBPOTAL
    - static
    - templates
    - app.py
    - deployment.yaml
    - DeployCentGlobalRootCA.crt
    - Dockerfile
    - requirements.txt
    - sendemail.py
    - service.yaml

```
Windows PowerShell
PS E:\Projects\jobportal> docker build -t jobportal .
[+] Building 135.4s (12/12) FINISHED
=> [internal] load build definition from Dockerfile 0.1s
=> [internal] load .dockerignore 0.0s
=> [internal] load Dockerfile 0.1s
=> [internal] load context: . 0.0s
=> [internal] load metadata for docker.io/library/python:3.6 3.5s
[auth] library/python:pull token for registry-1.docker.io 0.0s
=> [1/6] FROM docker.io/library/python:3.6sha256:f8652afaf88c25f8d22354d547d892591067aa4026a7fa9a6819df9f308af6fc 62.4s
=> resolve docker.io/library/python:3.6sha256:f8652afaf88c25f8d22354d547d892591067aa4026a7fa9a6819df9f308af6fc 0.0s
=> sha256:d957a4997a8ec979df5ac11872359c2de516f82214c8448e926303b376d3b66d 2.22s / 2.22s
=> sha256:0e2996cd5c1c0e309701d21a73a941d07865c1b90974732a00908b77a6e1c3 54.92MB / 54.92MB 24.4s
=> sha256:f8652afaf88c25f8d22354d547d892591067aa4026a7fa9a6819df9f308af6fc 1.86s / 1.86s
=> sha256:94d68638d97c5ad24d6d21fc889abb3486a27634c80920864f71f3f48b104 9.27s / 9.27s
=> sha256:cb5b7ae361722f078eca53f35823ed21baa85d61d5e95cd5a95ab53d70acdd56 10.87MB / 10.87MB 6.2s
=> sha256:9b829c73b52b2b97d5c87a54f0bf3e921995a296c714b53a32ae67d19231fcd 5.15MB / 5.15MB 5.0s
=> sha256:6494e4811622b31c827ccac322ca463937fd885f569a93e6f15c01aade718793 58.57MB / 58.57MB 38.6s
=> sha256:6f9f74b996d9a93fe0172f594faba85e0b4a8a9481a8fefd9112efc7e4d3c78f7 196.51MB / 196.51MB 55.0s
=> sha256:5e3b1213efc56598e78bd001983945c1640e2a37285e08a62dada823124dc783 6.29MB / 6.29MB 28.1s
=> extracting sha256:0e2996cd5c1c0e309701d21a73a941d07865c1b90974732a00908b77a6e1c3 3.1s
=> extracting sha256:9b829c73b52b2b97d5c87a54f0bf3e921995a296c714b53a32ae67d19231fcd 0.4s
=> sha256:9fd0dc56334f2e6efad7e241bf5e7459c48ed185c5478676f41c1244b096752 14.21MB / 14.21MB 34.4s
=> extracting sha256:cb5b7ae361722f078eca53f35823ed21baa85d61d5e95cd5a95ab53d70acdd56 6.4s
=> sha256:489f62804bac0412ca522cbb9f254b1c91fcaa6080bfee08e0b243b2f31bab7 235B / 235B 31.8s
=> extracting sha256:6494e4811622b31c827ccac322ca463937fd885f569a93e6f15c01aade718793 2.9s
=> sha256:c4f42be2be53b990ebffcc940c1df13de33834cccf5d954a56808a6169a3a3f 2.21MB / 2.21MB 32.6s
=> extracting sha256:6f9f74b996d9a93fe0172f594faba85e0b4a8a9481a8fefd9112efc7e4d3c78f7 5.2s
=> extracting sha256:5e3b1213efc56598e78bd001983945c1640e2a37285e08a62dada823124dc783 0.2s
=> extracting sha256:9fd0dc56334f2e6efad7e241bf5e7459c48ed185c5478676f41c1244b096752 8.5s
=> extracting sha256:489f62804bac0412ca522cbb9f254b1c91fcaa6080bfee08e0b243b2f31bab7 0.8s
=> extracting sha256:c4f42be2be53b990ebffcc940c1df13de33834cccf5d954a56808a6169a3a3f 0.2s
=> [internal] load build context 0.1s
=> transferring context: 122.73kB 0.8s
=> [2/6] WORKDIR /app 0.0s
=> [3/6] ADD . /app 0.0s
=> [4/6] COPY requirements.txt /app 0.1s
=> [5/6] RUN python3 -m pip install -r requirements.txt 65.6s
=> [6/6] RUN python3 -m pip install ibm_db 1.4s
=> exporting to image 1.2s
=> exporting layers 1.1s
=> writing image sha256:541674ecbb5521d32fe88dcd04b18f782a8524d26803a9275cefa190d6c0f2 0.0s
=> naming to docker.io/library/jobportal 0.0s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
PS E:\Projects\jobportal>
```

Containers

Images

Volumes

Dev Environments BETA

Extensions BETA

Add Extensions

Update to latest

Images

Give feedback

An image is a read-only template with instructions for creating a Docker container. [Learn more](#)

LOCAL

REMOTE REPOSITORIES

Refresh to see disk usage

7 Images

Last refresh: Never

Search

	NAME	TAG	STATUS	CREATED	SIZE	ACTIONS
<input type="checkbox"/>	jobportal 541674ecbb55	latest	Unused	less than a minute a	1.08 GB	<div></div>
<input type="checkbox"/>	ccr1 0fe4214e6a62	latest	In use	1 day ago	116.44 MB	<div></div>
<input type="checkbox"/>	sekarmoorthy/ccr 0fe4214e6a62	latest	In use	1 day ago	116.44 MB	<div></div>
<input type="checkbox"/>	ccr 18f8be21e369	latest	Unused	1 day ago	931.34 MB	<div></div>
<input type="checkbox"/>	sekarmoorthy/ccr.123 fc0b31b61987	latest	Unused	5 days ago	105.01 MB	<div></div>
<input type="checkbox"/>	lcr.io/ibmprojectccr/ccr fc0b31b61987	latest	Unused	5 days ago	105.01 MB	<div></div>
<input type="checkbox"/>	hello-world feb5d9fea6a5	latest	Unused	about 1 year ago	13.26 KB	<div></div>

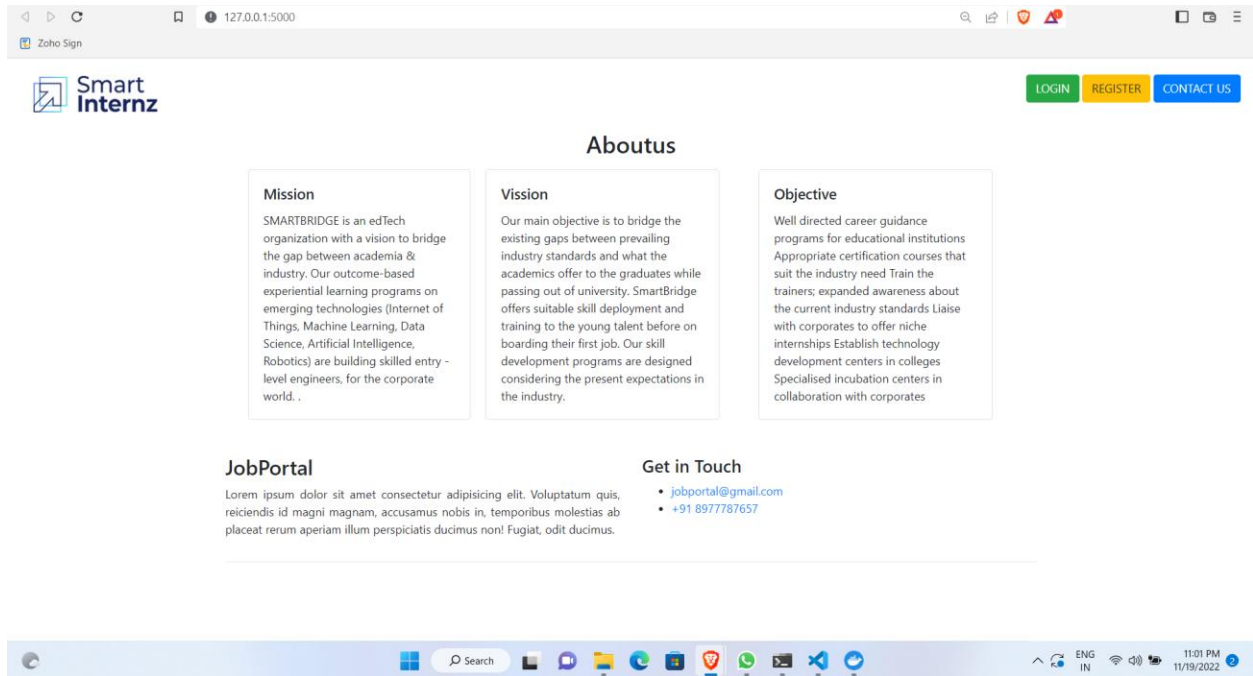
Showing 7 items

RAM 2.55GB

CPU 0.45%

Connected to Hub

v4.14.0



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

```
Windows PowerShell
PS E:\Projects> ibmcloud cr login
Logging 'docker' in to 'icr.io'...
Logged in to 'icr.io'.

OK
PS E:\Projects> docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
jobportal            latest             fefcc01e404        12 minutes ago     1.88GB
sekarwoorthy/ccr     latest             8fe4214e6a62       29 hours ago       116MB
ccr1                 latest             8fe4214e6a62       29 hours ago       116MB
ccr                  latest             18fb8e21e369       29 hours ago       931MB
sekarwoorthy/ccr_123 latest             fc8b31b61987       5 days ago         185MB
icr.io/ibmprojectccr/latest fc8b31b61987       5 days ago         185MB
hello-world          latest             feb5d9fea6a5       14 months ago      13.3kB
icr.io/assignment4ccr/hello-world latest             feb5d9fea6a5       14 months ago      13.3kB
icr.io/ibmprojectccr/hello-world latest             feb5d9fea6a5       14 months ago      13.3kB
PS E:\Projects> docker tag hello-world icr.io/assignment4ccr/hello-world:latest
PS E:\Projects> docker push icr.io/assignment4ccr/hello-world:latest
The push refers to repository [icr.io/assignment4ccr/hello-world]
e07ee1baac5f: Pushed
latest: digest: sha256:f54a58bc1aac5e1a25d796ae155dc228b3f0e11d046ae276b39c4bf2f13d8c4 size: 525
PS E:\Projects> |
```

IBM-Project-21934-16597f SendGrid Search For Solutions. Get S IBM Assignments-CapD/Assign IBM Cloud Container I Unable to create repository

cloud.ibm.com/registry/images Zoho Sign

IBM Cloud Search resources and products... Catalog Manage Sekar Moorthy's Account

Container Registry

Quick start

Namespaces 1

Repositories 1

Images 1

Trash 0

Settings

Images

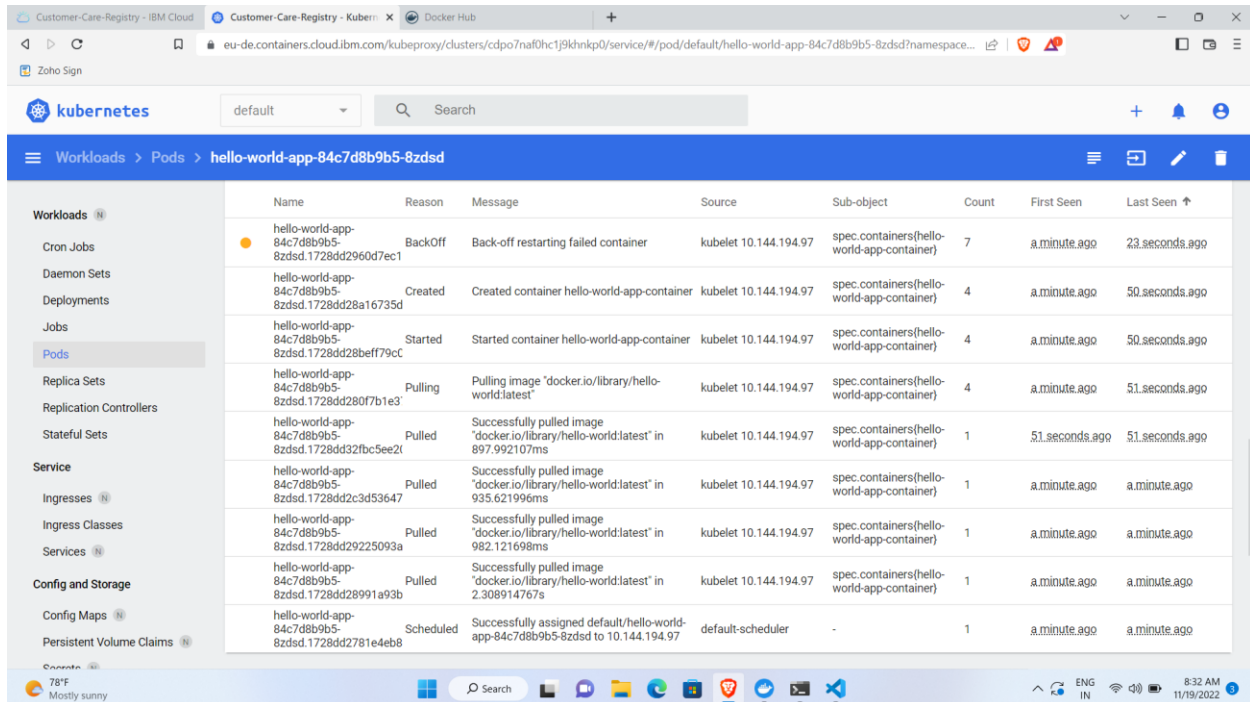
Location Global

View by: Digest Search Create +

Repository@digest	Tags	Manifest type	Created	Size	Security status
assignment4ccr/hello-world@sha256:f54a58bc1aac...	latest	Docker	422 days ago	2 KB	Unsupported OS

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

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.



The screenshot shows the Kubernetes dashboard interface. The top navigation bar includes the Kubernetes logo, a search bar, and a dropdown menu. The main content area displays the 'hello-world-app-84c7d8b9b5-8zdsd' namespace. The 'Pods' tab is selected, showing a list of pods with their status, reason, message, source, sub-object, count, first seen, and last seen.

Name	Reason	Message	Source	Sub-object	Count	First Seen	Last Seen
hello-world-app-84c7d8b9b5-8zdsd.1728dd2960d7ec1	BackOff	Back-off restarting failed container	kubelet 10.144.194.97	spec.containers(hello-world-app-container)	7	a minute ago	23 seconds ago
hello-world-app-84c7d8b9b5-8zdsd.1728dd28a16735d	Created	Created container hello-world-app-container	kubelet 10.144.194.97	spec.containers(hello-world-app-container)	4	a minute ago	50 seconds ago
hello-world-app-84c7d8b9b5-8zdsd.1728dd28beff79cc	Started	Started container hello-world-app-container	kubelet 10.144.194.97	spec.containers(hello-world-app-container)	4	a minute ago	50 seconds ago
hello-world-app-84c7d8b9b5-8zdsd.1728dd280f7b1e3	Pulling	Pulling image "docker.io/library/hello-world:latest"	kubelet 10.144.194.97	spec.containers(hello-world-app-container)	4	a minute ago	51 seconds ago
hello-world-app-84c7d8b9b5-8zdsd.1728dd327bc5ee2l	Pulled	Successfully pulled image "docker.io/library/hello-world:latest" in 897.992107ms	kubelet 10.144.194.97	spec.containers(hello-world-app-container)	1	51 seconds ago	51 seconds ago
hello-world-app-84c7d8b9b5-8zdsd.1728dd2c3d53647	Pulled	Successfully pulled image "docker.io/library/hello-world:latest" in 935.621996ms	kubelet 10.144.194.97	spec.containers(hello-world-app-container)	1	a minute ago	a minute ago
hello-world-app-84c7d8b9b5-8zdsd.1728dd29225093a	Pulled	Successfully pulled image "docker.io/library/hello-world:latest" in 982.121698ms	kubelet 10.144.194.97	spec.containers(hello-world-app-container)	1	a minute ago	a minute ago
hello-world-app-84c7d8b9b5-8zdsd.1728dd28991a93b	Pulled	Successfully pulled image "docker.io/library/hello-world:latest" in 2.308914767s	kubelet 10.144.194.97	spec.containers(hello-world-app-container)	1	a minute ago	a minute ago
hello-world-app-84c7d8b9b5-8zdsd.1728dd2781e4eb8	Scheduled	Successfully assigned default/hello-world-app-84c7d8b9b5-8zdsd to 10.144.194.97	default-scheduler	-	1	a minute ago	a minute ago