

**Assignment - 4**  
Kubernetes/Docker

Assignment Date	9 September 2022
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Student Roll Number	111519205041
Maximum Marks	2 Marks

## Question 1:

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

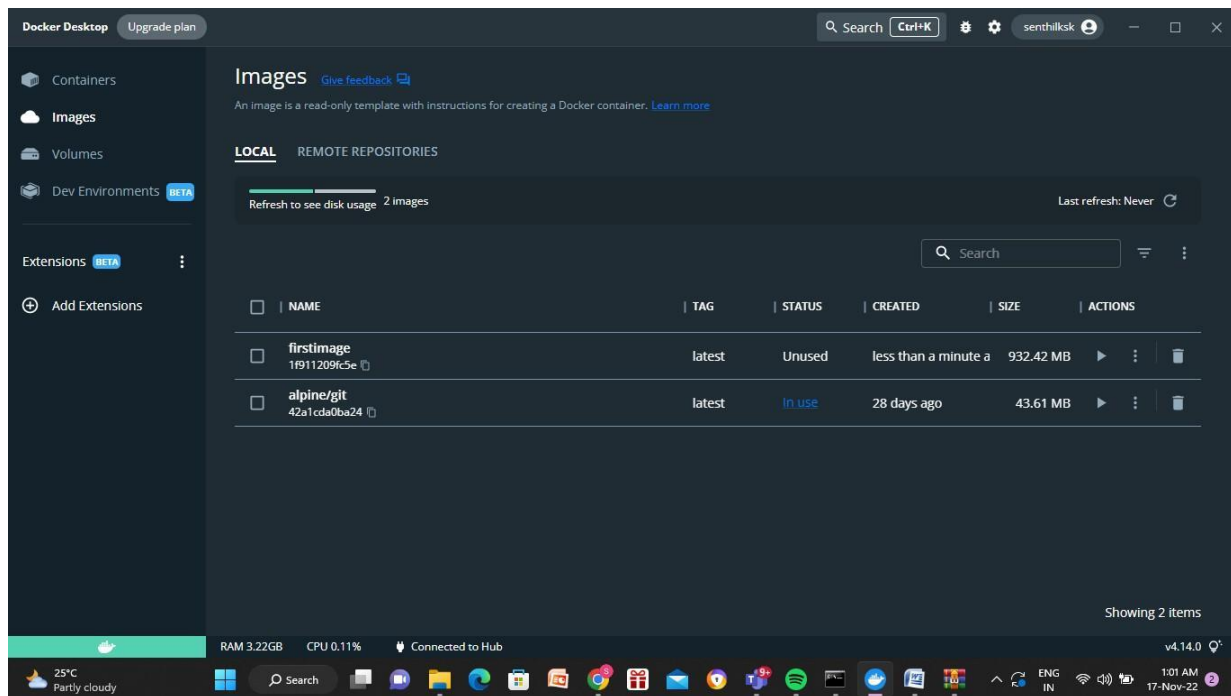
The screenshot shows the Docker Playground interface on a web browser. The top bar displays the URL `labs.play-with-docker.com/p/cdqjc0m0qau0009ecnhg#cdqjc0m0_cdqjc360qau0009ecni0`. The left sidebar shows a timer at 03:55:01, a 'CLOSE SESSION' button, and a list of instances with one instance named 'node1' at IP 192.168.0.18. The main panel shows the instance details for 'cdqjc0m0\_cdqjc360qau0009ecni0', including its IP (192.168.0.18), memory, CPU, and SSH access. Below this, there are 'DELETE' and 'EDITOR' buttons. The terminal window shows the following commands and output:

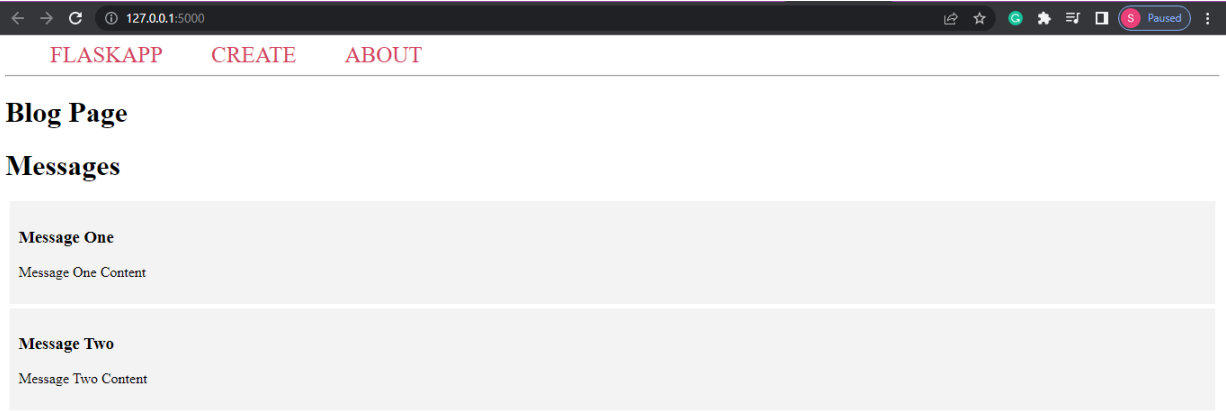
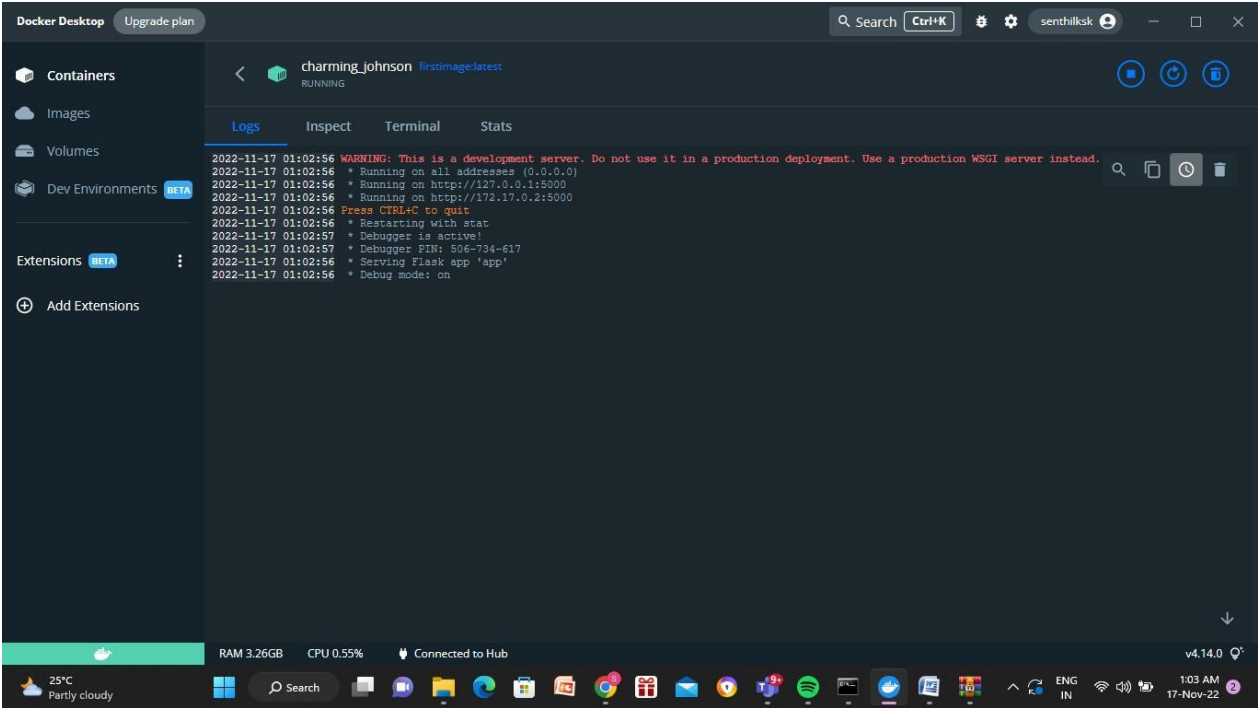
```
[node1] (local) root@192.168.0.18 ~
$ docker run -d -p 80:80 docker/getting-started
Unable to find image 'docker/getting-started:latest' locally
latest: Pulling from docker/getting-started
4f9b9388f04a: Pull complete
5867cba5fcbd: Pull complete
4b639e65cb3b: Pull complete
061ed9e2b976: Pull complete
bc19f3e8eeb1: Pull complete
4071be97c256: Pull complete
79b586f1a54b: Pull complete
0c9732f525d6: Pull complete
Digest: sha256:b558be874169471bd4e65bd6eac8c303b271a7ee8553ba47481b73b2bf597aee
Status: Downloaded newer image for docker/getting-started:latest
7dfdefc1ac7004d41ac96127b2c8cc10ff2bab808630c71387aa4de85dd59276
[node1] (local) root@192.168.0.18 ~
$
```

```
Command Prompt
C:\Users\Siva\Desktop\flask_with_form_and_docker-main>docker build -t firstimage .
[+] Building 79.0s (11/11) FINISHED
-> [internal] load build definition from Dockerfile 0.1s
-> [internal] load .dockerignore 0.0s
-> [internal] load metadata for docker.io/library/python:3.10.6 3.1s
-> [auth] library/python:pull token for registry-1.docker.io 0.0s
-> [internal] load build context 0.1s
-> [internal] load build context 0.0s
-> [1/5] FROM docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa 71.4s
-> resolve docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa 0.0s
-> sha256:025a6e380b10283603ff696d777bba5c0b1b0126fb0be7d11809574946bcf84 8.53kB / 8.53kB 0.0s
-> sha256:1671565cc0d4f8c365c9b66d1d3fbc164e72d01f1b0438c6179588428f99a9da2e 55.01MB / 55.01MB 28.3s
-> sha256:3e94d13e5e7a4ef17ff21376f57fb95c7a1706031f8704aa99260968d81f6e4 5.16MB / 5.16MB 2.5s
-> sha256:fabcf7528c685216129e8e67bf362a7702e7b1daa585ab85546a41508838657d6 10.88MB / 10.88MB 6.1s
-> sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa91052 2.35kB / 2.35kB 0.0s
-> sha256:8d1f943ceaf3b3ce05d5c0926e7958836b048b700176bf9c56d8f37ac13fca 2.22kB / 2.22kB 0.0s
-> sha256:53ad072f9cd16fcb8eb93b182b20e758e11acc0ef60babe0bf1043c08de1901a 54.58MB / 54.58MB 30.4s
-> sha256:d6b983117533b718374f1701ef593dd2afa6613c7908c6553be8e2a150e6448a 196.79MB / 196.79MB 60.5s
-> sha256:d8092d56ded5476fe7c302256eb4dc6ff495ae8fb4dd28aa18dbcb7581e24a6c 6.29MB / 6.29MB 32.0s
-> extracting sha256:1671565cc0d4f8c365c9b66d1d3fbc164e72d01f1b0438c6179588428f99a9da2e 3.3s
-> sha256:c71afc37d59adc44c5fd3c348504df82b35bb204f0057ea22c6ac8a1d285a5 20.02MB / 20.02MB 38.7s
-> extracting sha256:3e94d13e5e7a4ef17ff21376f57fb95c7a1706031f8704aa99260968d81f6e4 0.4s
-> sha256:864a10b3c704553e08cb5fcd12fb8ee1c07048f6365f0fa35e84a285413da40b 234B / 234B 32.3s
-> sha256:4334b2fe8293d19ddc1c3550893aae88f21601a7c85a31c6da6c0dc48fb6ed3c 3.04MB / 3.04MB 34.2s
-> extracting sha256:fabcf7528c685216129e8e67bf362a7702e7b1daa585ab85546a41508838657d6 0.4s
-> extracting sha256:53ad072f9cd16fcb8eb93b182b20e758e11acc0ef60babe0bf1043c08de1901a 3.3s
-> extracting sha256:d6b983117533b718374f1701ef593dd2afa6613c7908c6553be8e2a150e6448a 7.5s
-> extracting sha256:d8092d56ded5476fe7c302256eb4dc6ff495ae8fb4dd28aa18dbcb7581e24a6c 0.7s
-> extracting sha256:c71afc37d59adc44c5fd3c348504df82b35bb204f0057ea22c6ac8a1d285a5 1.2s
-> extracting sha256:864a10b3c704553e08cb5fcd12fb8ee1c07048f6365f0fa35e84a285413da40b 0.0s
-> extracting sha256:4334b2fe8293d19ddc1c3550893aae88f21601a7c85a31c6da6c0dc48fb6ed3c 0.5s
-> [2/5] WORKDIR /app 0.6s
-> [3/5] COPY requirements.txt ./ 0.1s
-> [4/5] RUN pip install -r requirements.txt 4.1s
-> [5/5] COPY . . 0.1s
-> exporting to image 0.3s
-> exporting layers 0.2s
-> writing image sha256:1f911200fc5ebdbfa750060822403b74978629379178f5f0239a3006f322314f 0.0s
-> naming to docker.io/library/firstimage 0.0s
```

## Question 2:

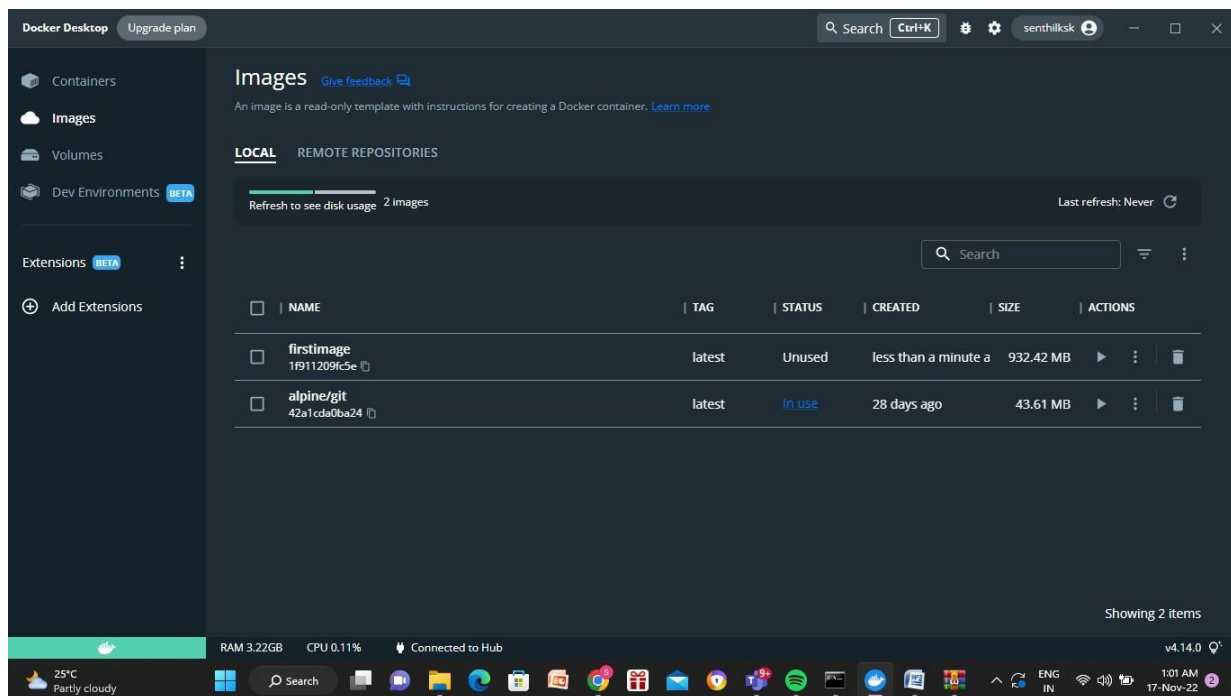
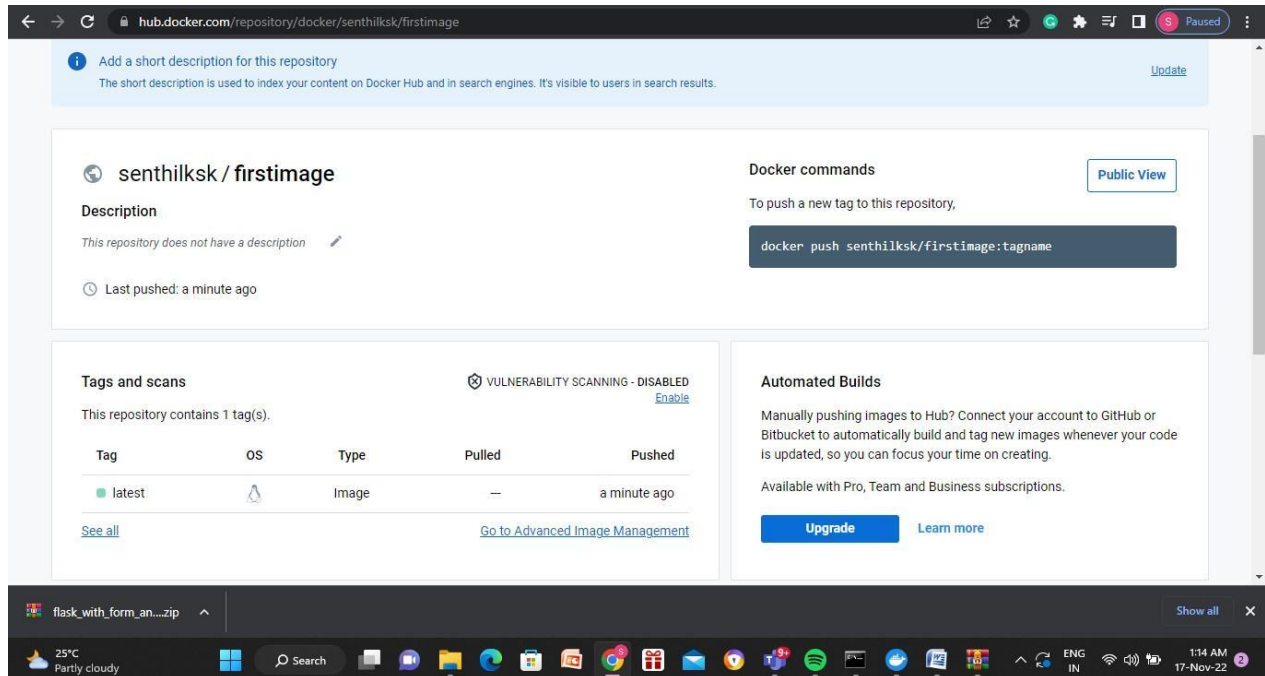
Create a docker file for the job portal application and deploy it in Docker desktop application.





## Question 3:

Create a IBM container registry and deploy a hello world app or job portal app.



cloud.ibm.com/registry/namespaces

IBM Cloud

Search resources and products...

Container Registry

Quick start

- Namespaces** 1
- Repositories 0
- Images 0
- Trash 0
- Settings

## Namespaces

Location: Tokyo

Resource group: Filter... Search Create +

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

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

25°C Polluted air

cloud.ibm.com/registry/repos

IBM Cloud

Search resources and products...

Container Registry

Quick start

- Namespaces 1
- Repositories** 1
- Images 1
- Trash 0
- Settings

## Repositories

Location: Tokyo

Search Create +

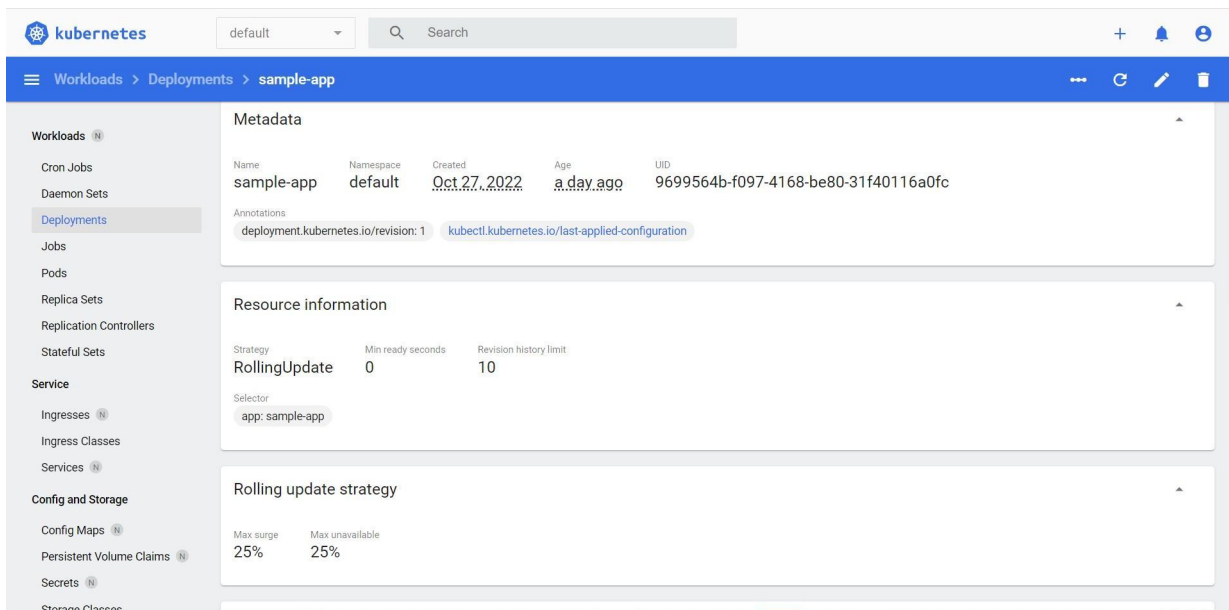
<input type="checkbox"/>	Name	Image count	Namespace	Last updated	
<input checked="" type="checkbox"/>	repo1 jp.icrio/senthil/repo1	1	senthil	1 hour ago	:

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

25°C Partly cloudy

## Question 4:

Create a Kubernetes cluster in IBM cloud and deploy hello world image or job portal image and also expose the same app to run in nodeport.



The screenshot displays the Kubernetes dashboard interface. The top navigation bar shows the 'kubernetes' logo, a dropdown menu set to 'default', a search bar, and icons for adding resources, notifications, and user profile. The main content area is titled 'Workloads > Deployments > sample-app'. On the left sidebar, the 'Deployments' section is highlighted under the 'Workloads' category. The main panel shows the details for the 'sample-app' deployment in the 'default' namespace. It includes a table with columns for Name, Namespace, Created, Age, and UID. The deployment was created on Oct 27, 2022, and is a day old. The UID is 9699564b-f097-4168-be80-31f40116a0fc. Below the table, there are sections for 'Annotations' (listing 'deployment.kubernetes.io/revision: 1' and 'kubectl.kubernetes.io/last-applied-configuration'), 'Resource information' (showing 'RollingUpdate' strategy, '0' min ready seconds, and '10' revision history limit), and 'Rolling update strategy' (showing '25%' max surge and '25%' max unavailable).

Name	Namespace	Created	Age	UID
sample-app	default	Oct 27, 2022	a day ago	9699564b-f097-4168-be80-31f40116a0fc

Annotations

- deployment.kubernetes.io/revision: 1
- kubectl.kubernetes.io/last-applied-configuration

Resource information

Strategy	Min ready seconds	Revision history limit
RollingUpdate	0	10

Selector

app: sample-app

Rolling update strategy

Max surge	Max unavailable
25%	25%

kubernetes

default

Search

Workloads > Pods > sample-app-d9bfd84d9-fp74z

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Secrets

Storage Classes

Metadata

Resource information

Conditions

Name

sample-app-d9bfd84d9-fp74z

Namespace

default

Created

Oct 27, 2022

Age

a day ago

UID

3f3b4ff6-4fa6-4f07-9454-35acb2c91631

Labels

app: sample-app pod-template-hash: d9bfd84d9

Node

docker-desktop

Status

ImagePullBackOff

IP

10.1.0.48

QoS Class

BestEffort

Restarts

0

Service Account

default

Type

Status

Last probe time

Last transition time

Reason

Message

Initialized

True

:

a day ago

-

-

Ready

False

:

a day ago

ContainersNotReady

containers with unready status: [sample-app-container]