

Task 3, Creating docker files and Kubernetes yaml manifests.

Here we generate the docker images and Kubernetes .yaml files.

As we are running the MongoDB using MongoDB Atlas, we do not need to worry about running the database on a separate pod to retain persistence ourselves.

The Connections are achieved using the connection uri stored in the .env files

Getting Started

To run this project, you will need

Java 11+

Maven 3.6+

Docker Desktop application

Installation

git clone

[https://github.com/NikhilKumar2444/Kaiburr-Task-](https://github.com/NikhilKumar2444/Kaiburr-Task-3.git)

3.git

To create the docker image locally:

Startup command prompt

Navigate to the local repository docker

build -t crudkaiburr8:latest .

To run: docker run -p 8888:8080 crudkaiburr8

Start PowerShell (Windows)/Terminal (Mac) - Navigate to installation directory : kubectl
apply -f k8s.yaml

The REST API should be available on port :8080

Output Screenshots

Creating Docker image and running on port:8888

```
Command Prompt - docker run -p 8888:8080 crudkaiburr8

C:\Users\DELL\Desktop\PROJECTS\springboot\crud\docker build -t crudkaiburr8:latest .
[*] Building 30.8s (8/8) FINISHED
-> [internal] load build definition from Dockerfile
-> => transferring dockerfile: 220B
-> [internal] load .dockerignore
-> => transferring context: 2B
-> [internal] load metadata for docker.io/library/openjdk:17
-> [auth] library/openjdk:pull token for registry-1.docker.io
-> [internal] load build context
-> => transferring context: 24.71MB
-> CACHED [1/2] FROM docker.io/library/openjdk:17@sha256:528707081f0e952e681912ba9f85ae7fc00be2f0eaf9f07662e7c3f38cb708
-> [2/2] 400 bytes/crud-0.0.1-SNAPSHOT.jar
-> exporting to image
-> => exporting layers
-> => writing image sha256:13bbab1e52157c44a5808e1e614d0ce4fc0388a5ee2b8f49c52b4107a5b42
-> => naming to docker.io/library/crudkaiburr8:latest

C:\Users\DELL\Desktop\PROJECTS\springboot\crud\docker images
REPOSITORY                                TAG                                IMAGE ID                                CREATED                                SIZE
crudkaiburr8                              latest                            33bbab1e8215                           21 seconds ago                        496MB
crudk8s                                    latest                            b0708b7e84c2                           About an hour ago                     496MB
nikhilkr942/kaiburr-t3                    latest                            baf8d8dc6a00                           31 hours ago                          496MB
crud                                       latest                            baf8d8dc6a00                           31 hours ago                          496MB
kaiburr-k8                                latest                            baf8d8dc6a00                           31 hours ago                          496MB
nikhilkr942/crud                           latest                            baf8d8dc6a00                           31 hours ago                          496MB
nikhilkr942/kaiburr-k8                     latest                            baf8d8dc6a00                           31 hours ago                          496MB
nubproxy.docker-internal:5555/docker/desktop-kubernetes  latest                            baf8d8dc6a00                           31 hours ago                          496MB
registry.k8s.io/kube-apiserver              v1.25.4                           00031e54acba                           4 months ago                          128MB
registry.k8s.io/kube-controller-manager     v1.25.4                           8f59f6d6faed6                           4 months ago                          117MB
registry.k8s.io/kube-proxy                  v1.25.4                           2c2bc1864279                           4 months ago                          61.7MB
registry.k8s.io/kube-scheduler              v1.25.4                           e2d17ec744c1                           4 months ago                          50.6MB
registry.k8s.io/etcd                         3.5.5-0                           4694002f8ed1                           6 months ago                          300MB
registry.k8s.io/pause                        3.8                                4873874c80ef                            9 months ago                          711KB
registry.k8s.io/coredns/coredns             v1.9.3                             5185b96f0bec                            10 months ago                         48.8MB
crccheck/hello-world                        latest                             24349d78cb62                           16 months ago                         1.24MB
docker/desktop-vpnkit-controller             v2.0                               8c2c38aa676e                           23 months ago                         21MB
docker/desktop-storage-provisioner           v2.0                               99f89471f470                           23 months ago                         41.9MB

C:\Users\DELL\Desktop\PROJECTS\springboot\crud\docker build -p 8888:8080 crudkaiburr8
unknown shorthand flag: 'p' in -p
See 'docker build --help'.

C:\Users\DELL\Desktop\PROJECTS\springboot\crud\docker run -p 8888:8080 crudkaiburr8

o.a.p.c.c.c. [Tomcat]. [localhost]. [/] : Initializing S
w.s.c.ServletWebServerApplicationContext : Root WebApplic
text: initialization completed in 5913 ms
main] org.mongodb.driver.client : MongoClient w
ata ("driver": {"name": "mongo-java-driver|sync|spring-boot", "version": "4.8.2"}, "os": {"type": "Linux", "name": "x", "architecture": "amd64", "version": "5.10.16.3-microsoft-standard-WSL2"}, "platform": "Java/Oracle Corpora
248-86") created with settings MongoClientSettings(readPreference=primary, writeConcern=WriteConcern(w=1, wfs
ll as, journal=null), retryWrites=true, retryReads=true, readConcern=ReadConcern(level=null), credential=MongoC
(mechanism=null, username="nikhil.kumar", source="admin", password=chldney, mechanismProperties=chldney), str
yFactory=null, commandListeners=[], codecRegistry=ProvidersCodecRegistry(codecProviders=[ValueCodecProvider(), B
CodecProvider(), DBRefCodecProvider(), ObjectIdCodecProvider(), DocumentCodecProvider(), CollectionCodecProvider
ableCodecProvider(), MapCodecProvider(), GeoJsonCodecProvider(), GridFSFileCodecProvider(), Jsr310CodecProvider
bjectCodecProvider(), bsonCodecProvider(), EnumCodecProvider(), com.mongodb.Jep395RecordCodecProvider|8b958a0751|
Settings(hosts=[127.0.0.1:27017], srvHost=cluster0.shn5wsm.mongodb.net, srvServiceName=mongodb, mode=REPLICA
dClusterType=REPLICA_SET, requiredReplicaSetName="atlas-zvhxz3-shard-0", serverSelector=null, clusterListene
erverSelectionTimeout=30000 ms, localThreshold=30000 ms), socketSettings=SocketSettings(connectTimeoutMS=100
TimeoutMS=0, receiveBufferSize=0, sendBufferSize=0), heartbeatSocketSettings=SocketSettings(connectTimeoutMS=100
TimeoutMS=10000, receiveBufferSize=0, sendBufferSize=0), connectionPoolSettings=ConnectionPoolSettings(maxSize=
ize=0, maxWaitTimeMS=120000, maxConnectionIdleTimeMS=0, maxConnectionLifeTimeMS=0, maintenanceIntervalMS=0,
nceFrequencyMS=60000, connectionPoolListeners=[], maxConnecting=2, serverSettings=ServerSettings(heartbeatFre
0000, minHeartbeatFrequencyMS=500, serverListeners=[], serverMonitorListeners=[]), sslSettings=SslSettings(c
rue, invalidHostNameAllowed=false, context=null), applicationName='null', compressorList=[], uuidRepresentati
ACY, serverApi=null, autoEncryptionSettings=null, contextProvider=null)
2023-03-27T23:09:29.414Z INFO 1 --- [wsm.mongodb.net] org.mongodb.driver.cluster : Adding discove
er ac-dgocbn-shard-00-02.shn5wsm.mongodb.net:27017 to client view of cluster
2023-03-27T23:09:29.438Z INFO 1 --- [wsm.mongodb.net] org.mongodb.driver.cluster : Adding discove
er ac-dgocbn-shard-00-01.shn5wsm.mongodb.net:27017 to client view of cluster
2023-03-27T23:09:29.440Z INFO 1 --- [wsm.mongodb.net] org.mongodb.driver.cluster : Adding discove
er ac-dgocbn-shard-00-00.shn5wsm.mongodb.net:27017 to client view of cluster
2023-03-27T23:09:31.093Z INFO 1 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started
(s): 8080 (http) with context path ''
2023-03-27T23:09:32.023Z INFO 1 --- [main] com.kaliburr.crud.CrudApplication : Started CrudAp
n in 11.716 seconds (process running for 22.341)
2023-03-27T23:09:35.932Z INFO 1 --- [ngodb.net:27017] org.mongodb.driver.cluster : Monitor threa
fully connected to server with description ServerDescription(address=ac-dgocbn-shard-00-00.shn5wsm.mongodb.net:
ype=REPLICA_SET_SECONDARY, state=CONNECTED, ok=true, minWireVersion=0, maxWireVersion=13, maxDocumentSize=167772
calSessionTimeoutMinutes=30, roundTripTimeNanos=2293625300, setName="atlas-zvhxz3-shard-0", canonicalAddress=ac-
shard-00-00.shn5wsm.mongodb.net:27017, hosts=[ac-dgocbn-shard-00-00.shn5wsm.mongodb.net:27017, ac-dgocbn-shar
shn5wsm.mongodb.net:27017, ac-dgocbn-shard-00-02.shn5wsm.mongodb.net:27017], passives=[], arbiters=[], primary=
bn-shard-00-02.shn5wsm.mongodb.net:27017, tagSet=tagSet([Tag(name='nodeType', value='ELECTABLE'), Tag(name='pri
value='Afs'), Tag(name='region', value='AP_SOUTH_1'), Tag(name='workloadType', value='OPERATIONAL')]), electio
setVersion=3, topologyVersion=TopologyVersion(processId=641e984c351e0d74793c9a3a, counter=4), lastWriteDateMon
3:09:35 UTC 2023, lastUpdateTimeNanos=5835702504300)
2023-03-27T23:09:36.029Z INFO 1 --- [ngodb.net:27017] org.mongodb.driver.cluster : Monitor threa
fully connected to server with description ServerDescription(address=ac-dgocbn-shard-00-02.shn5wsm.mongodb.net:
```

Pushing docker image to docker hub

```
Command Prompt
operable program or batch file.

C:\Users\DELL\Desktop\PROJECTS\springboot\crud>docker tag crudkaiburr8 nikhilkr042/kaiburr-task3
C:\Users\DELL\Desktop\PROJECTS\springboot\crud>docker push nikhilkr042/kaiburr-task3
Using default tag: latest
The push refers to repository [docker.io/nikhilkr042/kaiburr-task3]
4162e75f8fd6: Pushed
4c9fa2d08576: Mounted from nikhilkr042/kaiburr-t3
27ee19dc88f2: Mounted from nikhilkr042/kaiburr-t3
c8dd97366670: Mounted from nikhilkr042/kaiburr-t3
latest: digest: sha256:d8eefdc304d74c7236a7d2602999cd04edcc2dada1ca29f0c5d5ed87e2ed9e98 size: 1166

C:\Users\DELL\Desktop\PROJECTS\springboot\crud>
```

Image Layer Details - nikhilkr042/

hub.docker.com/layers/nikhilkr042/kaiburr-task3/latest/images/sha256-d8eefdc304d74c7236a7d2602999cd04edcc2dada1ca29f0c5d5ed87e2ed9e98?context=repo

dockerhub

Search Docker Hub

Explore Repositories Organizations Help

Upgrade


nikhilkr042

nikhilkr042

Repositories

kaiburr-task3

latest



nikhilkr042/kaiburr-task3:latest

Delete Tag

DIGEST: sha256:d8eefdc304d74c7236a7d2602999cd04edcc2dada1ca29f0c5d5ed87e2ed9e98

OS/ARCH

linux/amd64

COMPRESSED SIZE

253.06 MB

LAST PUSHED

a minute ago by nikhilkr042

TYPE

Image

Image Layers

Vulnerabilities

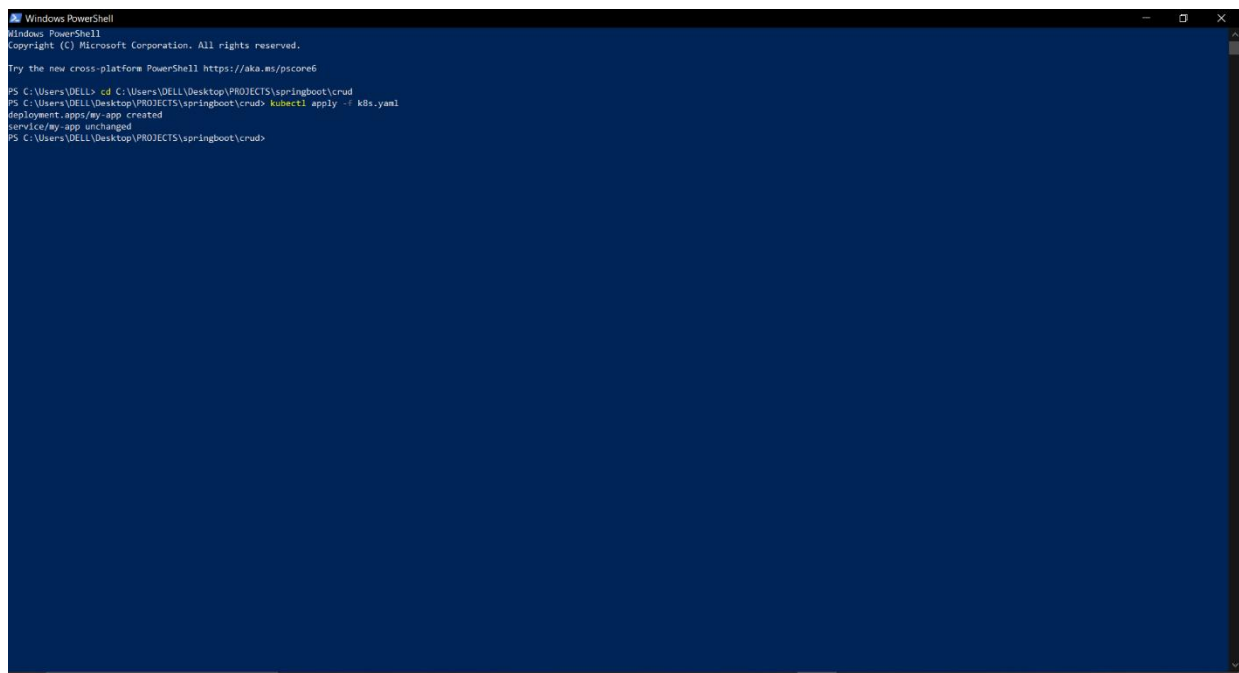
IMAGE LAYERS

1	ADD file ... in /	40.16 MB
2	CMD ["bin/bash"]	0 B
3	/bin/sh -c set -eux; microdnf	12.9 MB
4	ENV JAVA_HOME=/usr/java/openjdk-17	0 B
5	ENV PATH=/usr/java/openjdk-17/bin:/usr/local/sbin:/_	0 B
6	ENV LANG=C.UTF-8	0 B

Command

ADD file:9893213a9ea238f53ac68d87a3cf2f65d86763688392e5bdb6a2c9b6d3550a6 in /

Using the kubernetes yaml manifest



```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\DELL> cd C:\Users\DELL\Desktop\PROJECTS\springboot\crud
PS C:\Users\DELL\Desktop\PROJECTS\springboot\crud> kubectl apply -f k8s.yaml
deployment.apps/my-app created
service/my-app unchanged
PS C:\Users\DELL\Desktop\PROJECTS\springboot\crud>
```

Running on port 8080:



