SET RABBIT\_URI=amqp://localhost

java -jar zipkin-server-2.19.2-exec.jar

FROM openjdk:8

ADD target/LoginApplication-0.0.1-SNAPSHOT.jar LoginApplication-0.0.1-SNAPSHOT.jar

EXPOSE 7878

ENTRYPOINT ["java","-jar","LoginApplication-0.0.1-SNAPSHOT.jar"]

docker build -f Dockerfile -t loginapplication .

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Dockerize understanding

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>>Create Docker file with basic existing images like Openjdk

Build image using command: docker build -f dockerizer-ms2 -t ms-2-0.0.1-docker .

Check is docker image create using command : docker images

Run the image i.e. container using command : docker run -p 8095:8092 ms-2-0.0.1-docker

try hitting microservice URL

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Kubernetes understanding

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Steps

1 : Login to Ibmcloud

> ibmcloud login --sso

API endpoint: https://cloud.ibm.com

Region: us-south

Get One Time Code from https://identity-2.eu-central.iam.cloud.ibm.com/identity/passcode to proceed.

Open the URL in the default browser? [Y/n] > y

One Time Code >

OK

Targeted account Divya Goel's Account (bb3923a11c991176b1972ed720dbb439)

API endpoint: https://cloud.ibm.com

Account: Divya Goel's Account (bb3923a11c991176b1972ed720dbb439)

Resource group: No resource group targeted, use 'C:\Program Files\IBM\Cloud\bin\ibmcloud.exe target -g RESOURCE\_GROUP'

CF API endpoint:

Org:

Space:

2 : CR ie. Container registry plugin to be installed using below command

ibmcloud plugin install container-registry

2.1 : also CS ie. container-service

ibmcloud plugin install container-service

3 : Check for existing namespaces

ibmcloud cr namespace-list

4 : Add namespace

ibmcloud cr namespace-add crnamespace

5 : Check for docker images on local

> ibmcloud cr images

Listing images...

Repository Tag Digest Namespace Created Size Security status

us.icr.io/crnamespace/crrepo 1 f790b3fc1dd7 crnamespace 29 seconds ago 271 MB Scanning...

us.icr.io/crnamespace/crrepo crtag 8b8adc7f5e5a crnamespace 3 days ago 267 MB No Issues

OK

5.0.1 : Login IBMCLOUD CR

> ibmcloud cr login

Logging in to 'registry.ng.bluemix.net'...

Logged in to 'registry.ng.bluemix.net'.

Logging in to 'us.icr.io'...

Logged in to 'us.icr.io'.

5.1 : We can check Cloud quota using below command

> ibmcloud cr quota

Getting quotas and usage for the current month, for account 'Divya Goel's Account'...

Quota Limit Used

Pull traffic 5.0 GB 254 MB

Storage 512 MB 303 MB

OK

6 : tag Docker image to registry

X docker tag ms-2-0.0.1-docker:latest registry.eu-de.bluemix.net/activity\_namespace/image\_repo:1

>docker tag igrocery-service-registry-docker:latest us.icr.io/activity\_namespace/image\_repo:ser-reg

> docker tag dgoel27/curreny-exchange-service:latest us.icr.io/crnamespace/crrepo:1

7: Push this local image to container registry

X docker push registry.eu-de.bluemix.net/activity\_namespace/image\_repo:1

> docker push us.icr.io/crnamespace/crrepo:1

The push refers to repository [us.icr.io/crnamespace/crrepo]

4bab4a386893: Pushed

2ee490fbc316: Layer already exists

b18043518924: Layer already exists

9a11244a7e74: Layer already exists

5f3a5adb8e97: Layer already exists

73bfa217d66f: Layer already exists

91ecdd7165d3: Layer already exists

e4b20fcc48f4: Layer already exists

1: digest: sha256:5111e898556595d0ee697985c6084338850c84dbc3103c5527c1dc83ed4d067b size: 2007

8: Validate the image on ibmcloud

> ibmcloud cr image-list

Listing images...

Repository Tag Digest Namespace Created Size Security status

us.icr.io/crnamespace/crrepo 1 f790b3fc1dd7 crnamespace 27 minutes ago 271 MB No Issues

us.icr.io/crnamespace/crrepo crtag 8b8adc7f5e5a crnamespace 3 days ago 267 MB No Issues

OK

9: Perform build for the container registry (GO TO Path where the Docker file resides)

> ibmcloud cr build -f Dockerfile -t us.icr.io/crnamespace/crrepo:1 .

Sending build context to Docker daemon 57.45MB

---> 09df0563bdfc

Step 2/4 : ADD target/curreny-exchange-service-0.0.1-SNAPSHOT.jar curreny-exchange-service-Docker.jar

---> 439a95748a54

Step 3/4 : EXPOSE 8111

---> Running in 28279104f32c

Removing intermediate container 28279104f32c

---> 0510daa486fc

Step 4/4 : ENTRYPOINT ["java","-jar","curreny-exchange-service-Docker.jar"]

---> Running in 8f67bff33ffc

Removing intermediate container 8f67bff33ffc

---> 185bebaa284c

Successfully built 185bebaa284c

Successfully tagged us.icr.io/crnamespace/crrepo:1

The push refers to repository [us.icr.io/crnamespace/crrepo]

[1B4a386893: Preparing

[1B90fbc316: Preparing

[1B43518924: Preparing

[1B244a7e74: Preparing

[1B5adb8e97: Preparing

[1Ba217d66f: Preparing

[1Bdd7165d3: Preparing

[8B1: digest: sha256:f790b3fc1dd7275fca50ff419efb8d48dcc6b9f68a26c554e79f96ca7d80794f size: 2007

SECURITY WARNING: You are building a Docker image from Windows against a non-Windows Docker host. All files and directories added to build context will have '-rwxr-xr-x' permissions. It is recommended to double check and reset permissions for sensitive files and directories.

OK

10: Set CS region to cluster's region

>ibmcloud cs region-set eu-de

11 : Get cluster config using below command (this command is deprecated 'ibmcloud ks cluster config')

> ibmcloud cs cluster config --cluster crcluster

12 : Copy result of above command in next command line.

>Eg

SET IKS\_BETA\_VERSION=1

SET KUBECONFIG=C:\Users\DivyaGoel\.bluemix\plugins\container-service\clusters\crcluster-bnkvef6d0f224lcn0oug\kube-config-hou02-crcluster.yml

13 : To see nodes us below command

> kubectl get nodes

NAME STATUS ROLES AGE VERSION

10.76.92.199 Ready <none> 3d3h v1.14.9+IKS

\*\*\*\*\*\*

Deploy your MS application to Kubernetes

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14 : Create deployment

> kubectl run crdeployment --image=us.icr.io/crnamespace/crrepo:1

kubectl run --generator=deployment/apps.v1 is DEPRECATED and will be removed in a future version. Use kubectl run --generator=run-pod/v1 or kubectl create instead.

deployment.apps/crdeployment created

15 : Verify PODS are running

> kubectl get pods

NAME READY STATUS RESTARTS AGE

crdeployment-56b99c7c78-tf5kl 1/1 Running 0 91s

16 : See logs

> kubectl logs crdeployment-56b99c7c78-tf5kl

17 : Create Service

> kubectl expose deployment/crdeployment --type=NodePort --port=8111 --name=currency-exchange-service --target-port=8111

service/currency-exchange-service exposed

18 : Obtain the NodePort of your service

PS C:\Users\DivyaGoel\Desktop\Share project\curreny-exchange-service\curreny-exchange-service> kubectl describe service currency-exchange-service

Name: currency-exchange-service

Namespace: default

Labels: run=crdeployment

Annotations: <none>

Selector: run=crdeployment

Type: NodePort

IP: 172.21.248.8

Port: <unset> 8111/TCP

TargetPort: 8111/TCP

NodePort: <unset> 30391/TCP

Endpoints: 172.30.143.140:8111

Session Affinity: None

External Traffic Policy: Cluster

Events: <none>

19 : Obtain the public IP address of the cluster

PS C:\Users\DivyaGoel\Desktop\Share project\curreny-exchange-service\curreny-exchange-service> ibmcloud ks workers --cluster crcluster

OK

ID Public IP Private IP Flavor State Status Zone Version

kube-bnkvef6d0f224lcn0oug-crcluster-default-0000005c 173.193.92.91 10.76.92.199 free normal Ready hou02 1.14.9\_1541

--> try hitting http://publicIP:NodePort

For MS-1 **http://173.193.92.91:30391/currency-exchange/from/EUR/to/INR**

PS C:\Users\DivyaGoel\Desktop\Share project\curreny-exchange-service\curreny-exchange-service> kubectl config current-context

crcluster/bnkvef6d0f224lcn0oug

PS C:\Users\DivyaGoel\Desktop\Share project\curreny-exchange-service\curreny-exchange-service> kubectl config view

apiVersion: v1

clusters:

- cluster:

certificate-authority: C:\Users\DivyaGoel\.bluemix\plugins\container-service\clusters\crcluster-bnkvef6d0f224lcn0oug\ca-hou02-crcluster.pem

server: https://c5.dal12.containers.cloud.ibm.com:20322

name: crcluster/bnkvef6d0f224lcn0oug

contexts:

- context:

cluster: crcluster/bnkvef6d0f224lcn0oug

namespace: default

user: divgoel4@in.ibm.com/bb3923a11c991176b1972ed720dbb439

name: crcluster/bnkvef6d0f224lcn0oug

current-context: crcluster/bnkvef6d0f224lcn0oug

kind: Config

preferences: {}

users:

- name: divgoel4@in.ibm.com/bb3923a11c991176b1972ed720dbb439

user:

auth-provider:

config:

client-id: kube

client-secret: kube

id-token: eyJraWQiOiIyMDE5MDcyNCIsImFsZyI6IlJTMjU2In0..VoezDIOA-U1D1JP2rZUPugCDvbI4y4zA3V6JeEkCQFW80d1d9XaGfJTeuRcvsUZhaJnjRLGYyPn3z5dzJHX35BNhx\_JOpxK1yuMUyLxP7QV4BDjif7jTlgVZCHnzJzbuQRedreJeR0o5LhA2lmHjlowPwRQcCZi-G\_Zc7hiYaVntKTBAdPBPuKU5JfBlvAWN\_IGGz4VD4lf4Ff0Z4FkLwdOJfd7FAZn7cYnNXcDLxPJjjrz7Mwwvh-TivNNaFS03QS6dxIFL8bY\_W-qJJDt3L-\_W71LbczzbWd7hBWy\_xI3OCYmCQBV4KANPpo2209GrKRiXPxKtW3oLIlUs6WeIEQ

idp-issuer-url: https://iam.bluemix.net/identity

refresh-token: ReVREw\_pddwnA0jYF1u5M\_hy2z0gEqTboxhXG-eWvm0ueHqAvPPD4AswDETrQmJ8aDNs4GRNuwrT1Fc1WaynlI2cJKm8Rf685VsAyYWtrctCUys7X5TVR\_j5X3Bm39JxbMbQIXtZDrBEUPTWwYA9lgDhorj9E1BpdzLKJKLRecrCbzA8Nar9ATHuOWRyziTOWXW8ewFaHOd\_ex1TfhG1sZmW4ZbrHfTfbDjHfCyY\_j99zStay3ggk7BYwoypmgCLbhBOJ0LI5Zo78e0i9xdy4mjZTvx47pwWFzhIONWQdUhC8Kn9xDeeqo54HD4mY5zINmIXgG4hwPQ\_A9eBucd5Bw0zdj-lAujW6n8k6N6wpfhit0EiBz2eIs10lrjEQtUBAPkyjz4fLM-exDX2G-8nHM6aXcyMsW4cH6iXCx13SUFBvrg7lryICcX1Zj8dCuda7xKQ4Js8tu76fDS3IEn72aDdXbUV3XVFZqqZ9PAUedTOLONEEzPQofs-ILidYSkzGwXGoEHT0BDX2DGhfXHplWhyTvmqPgPOnGyIn59ANK7bgw6pzSg-VQRaZ7hj9pq1pUUbTAQpJYKkH6YROfn1R\_6ElCytZXxevJ5JpO9dmQW-Nv7F856GOm9RiUH2J37d8lq7OxmhEazR469yAIhnx60dnw6WDUdSPo4\_S7D2tUVJPiXaxrjzNVaQWWmfyJA24EuKkGLSoEIigAlGol5HXXq4IX2KM8PNM6nb1oyf-rSW\_xehxBOHRHpzekJQpeLAX90HFOmbxmFVhfJLz2LjgCMmvY\_xOL4SUGmA-U1mo2ho9CCH1j5LpmE2prKydcx9asqsJCksEFp5aZZGOLmm65INw2eCJ5LFhc3BWBn2ZW69TIqRCnrTWj6Qm3QOUI\_\_kynyKscAHbu\_JpdNdaKScK69h29TjxQMMziiJ-tD9G1BqUIA53n7mO18ax902huR\_fx7m8ndp-b6cTAchVQpfmXJQ8gd9vjfcztrFxr9T01xX6qF\_Ewm32tZ5\_zW\_YGAY4kGa9jN6-gSpKxGPZ7sEu\_zwlLq-87ZiH11WNTQZzA7Pg

name: oidc