In this lab, we will provision **Kubernetes Cluster** on IBM Cloud.

Pre-req:

IBM Cloud Account
PROMO Code Applied
IBM Cloud CLI installed

1. Install the CLIs and Docker, 1. https://developer.ibm.com/courses/labs/1-install-bluemix-command-line-interface-cli-dwc020/
2. Install Plugins – IBM Container Service 1. https://console.bluemix.net/docs/containers/container_cli_cfic_install.html
For updation of Plugin run

$ bx plugin update container-registry -r Bluemix

Lab

Step 1: To push an image on IBM Cloud :

1. Log in to the IBM Cloud CLI:
bx login
To specify an IBM Cloud region, include the API endpoint.
Note: If you have a federated ID, use bx login --sso to log in to the IBM Cloud CLI. You know you have a federated ID when the login fails without the --sso and succeeds with the --sso option.
2. Run bx cr login, and log in with your IBM Cloud credentials. This will allow you to push images to the IBM Cloud Container Registry.
Tip: This course's commands show the ng region. Replace ng with the region outputted from the bx cr login command.

3. If unsure of your namespace in the IBM Cloud container registry, check with
$ bx cr namespace-list

4. In case there are no namespaces. Follow below step

   In order to upload images to the IBM Cloud Container Registry, you first need to create a namespace with the following command:
   $ bx cr namespace-add <my_namespace>

5. Tag built image with container registry tag
$ docker tag *<namespace>*/webapp registry.ng.bluemix.net/<my_namespace> **/webapp**

6. Now push that image up to IBM Cloud Container Registry

   $ docker push registry.ng.bluemix.net/*mdpatankar*/webapp

7. Now we should list the image you just pushed to container registry
There are also commands that scan your image for vulnerabilities when using BlueMix Container Registry

   $ bx cr images

   Listing images...

REPOSITORY	TAG	DIGEST	NAMESPACE	CREATED	SIZE	SECURITY STATUS
registry.ng.bluemix.net/mdpatankar/webapp	latest	730d0507e0cc	mdpatankar	1 week ago	272 MB	21 Issues

Step 2: To provision Kubernetes Cluster on IBM Cloud

1. Login using your credentials and create Kubernetes Cluster on IBM Cloud

   $bx cs cluster-create --name <name-of-cluster>

2. This will take around 20-25 minutes to provision cluster on IBM Cloud.

3. Check Status of cluster and nodes created

   $ bx cs clusters and make sure that your cluster is in “Normal” state.

$ bx cs clusters

Name	ID	State	Created	Workers	Location	Version
demokubecluster	b552b0f94ee8400fa02127d575f51398	normal	1 week ago	1	hou02	1.9.7_1510

$ bx cs workers <yourclustername>, and make sure that all workers are in “Normal” state with “Ready” status.

$ bx cs workers demokubecluster

OK

ID	Public IP	Private IP	Machine Type	State	Status	Zone	Version
kube-hou02-pab552b0f94ee8400fa02127d575f51398-w1	173.193.99.29	10.76.152.53	free	normal	Ready	hou02	1.9.7_1512

Make a note of the public IP of the worker.

Step 3: You are now ready to use Kubernetes to deploy the application to IBM Cloud

Congratulations !!!, You have completed this lab. Ready to deploy application on IBM Cloud.