Steps:

1. Create Cluster on IBM cloud: Login with IBM Cloud credentials and create service Containers in Kubernetes Clusters from service catalog. Please refer below link.

<https://console.bluemix.net/docs/containers/container_index.html#container_index>

2. Set up IBM Cloud CLI: Command line interface to manage applications, containers, infrastructures, services

<https://console.bluemix.net/docs/cli/reference/bluemix_cli/get_started.html#getting-started>

verify by using command like bx help

3. Install and Set Up kubectl: [kubectl](https://kubernetes.io/docs/user-guide/kubectl/), a Kubernetes command-line tool, to deploy and manage applications on Kubernetes.

There are multiple option to install kubectl.

<https://kubernetes.io/docs/tasks/tools/install-kubectl/>

4. Install the container service plugin.

bx plugin install container-service -r Bluemix

5. Gain access to your cluster

Log in to your IBM Cloud account. Login to the region where you have created the cluster.

For example:

bx login -a [https://api.au-syd.bluemix.net](https://api.au-syd.bluemix.net/)  
bx cs region-set ap-south

6.Set the **context** for the **cluster** in your CLI.

Get the command to set the environment variable and download the Kubernetes configuration files.

bx cs cluster-config <Your\_Cluster\_Name>

7.Set the KUBECONFIG environment variable. Copy the output from the previous command and paste it in your terminal. The command output should look similar to the following.

export KUBECONFIG=/Users/ibm/.bluemix/plugins/container-service/clusters/<your\_cluster\_name>/kube-config-mel01-your\_cluster\_name.yml

8. Verify that you can connect to your cluster by listing your worker nodes.

kubectl get nodes

9. Download the attached file. Run below command. (It is the same file which I shared earlier)

kubectl create -f <filepath\_to\_nginx.yaml>

10. bx cs workers <your\_cluster\_name\_created\_under\_ibm\_cloud>

The output will be similar to as below. The ip marked in bold is cluster IP in my case.

ID                                                                                               **Public IP**     Private IP

kube-mel01-paedbc7786e21c450e813eadc69ebaf43b-w1   **168.1.149.16**   10.118.243.226

11. You can access nginx application by below url.

http://<your\_cluster\_ip>:30090

**Lab work:**

bx login

kubectl version

kubectl cluster-info

bx cs cluster-config <<cluster>>

PODS:

kubectl create -f nginx\_pod.yaml

kubectl get pods

kubectl get pods {POD\_NAME}

kubectl describe pods {POD\_NAME}

SERVICE:

kubectl create -f nginx-service.yaml

kubectl expose nginxservice-4 --type="NodePort" --port=8080

kubectl get services

DEPLOYMENT:

kubectl create -f nginx-deployment.yaml

kubectl get deployments

kubectl describe deployments nginxdeploy-4

kubectl scale nginxdeploy-4 --replicas=4 or do it through the changing the yaml file property - replicas

Labels:

kubectl get pods -l app=<<value1>>

kubectl get pods -l app=<<value1>>,deployer=<<value2>>