

# Lab: Create Kubernetes Cluster on IBM Cloud

In this lab, you will create a Kubernetes cluster on IBM Cloud. You will do it by instantiating an IBM Kubernetes Service (IKS) in your IBM Cloud account. IKS is a cloud service managed by IBM, meaning IBM takes care that it runs properly. As of the day of this writing, IKS is available in two different pricing plans, named **Standard** plan and **Free** plan. It is up to you which pricing plan you will pick.

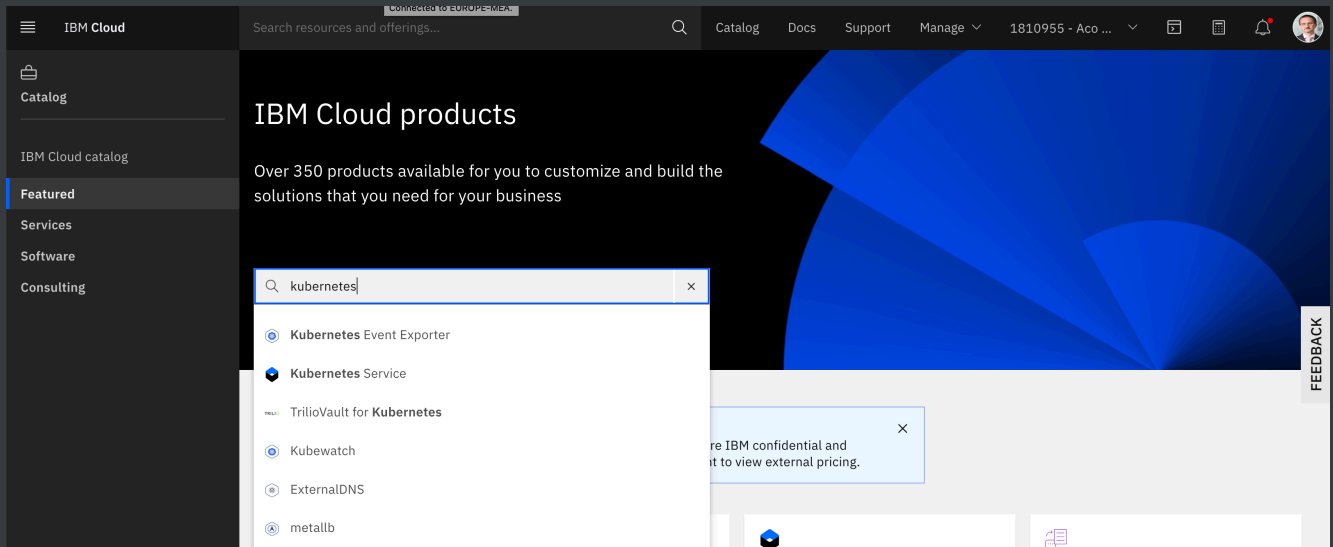
The Free plan is completely free for 30 days. It gives you a fully functional Kubernetes cluster, but with limited performance, thus it is suitable for learning, development and testing. After 30 days, such free IKS instance is automatically deleted, together with all its content and resources but you can create another one, again for 30 days.

The Standard plan offers very flexible configurations with many nodes, in different geographical locations etc, thus it is the best choice for production environment and more complex testing. This plan is priced based on usage per hour.

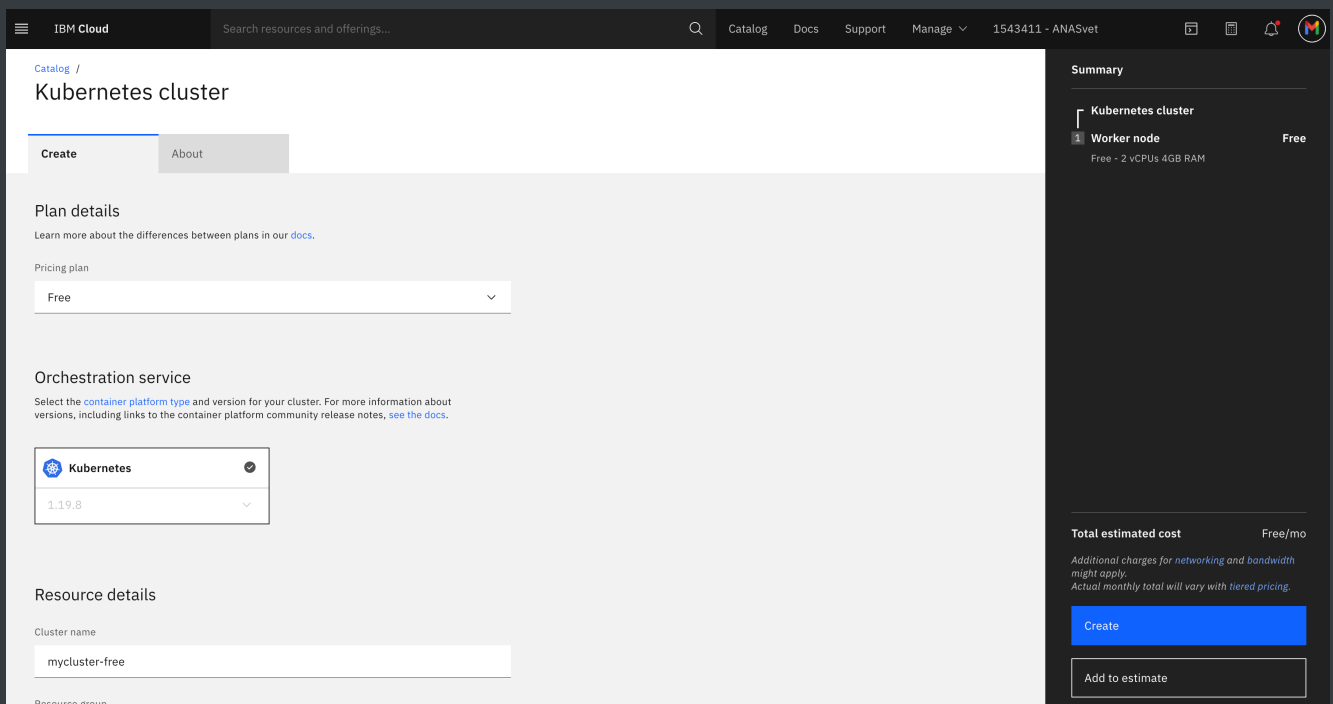
To be able to use the Free plan, you need to have an IBM Cloud account type **Pay-As-You-Go** or type **Subscription IBM**. If, on the other hand you have a **Lite** account, you need to convert it for a limited time (typically 90 days) to **Pay-As-You-Go** account by applying a **coupon code** as advised by your instructor. The coupon code will be sent to your email address. To check which account type you have, open the IBM Cloud console, go to **Manage > Account**, then on the left side select **Account settings** and look at the Account Type in the middle of the screen. To apply your coupon code: on the same page in IBM Cloud console, section **Subscription and feature codes**, click on **Apply code**, then enter the code you got in mail and click **Apply**. When the coupon code expires, you can either convert it back to Lite account or transform it permanently to the Pay-As-You-Go account.

In this lab, we will use the Free plan, to avoid any charges to our Cloud account. Let's go ahead and create our free K8S cluster on IBM Cloud!

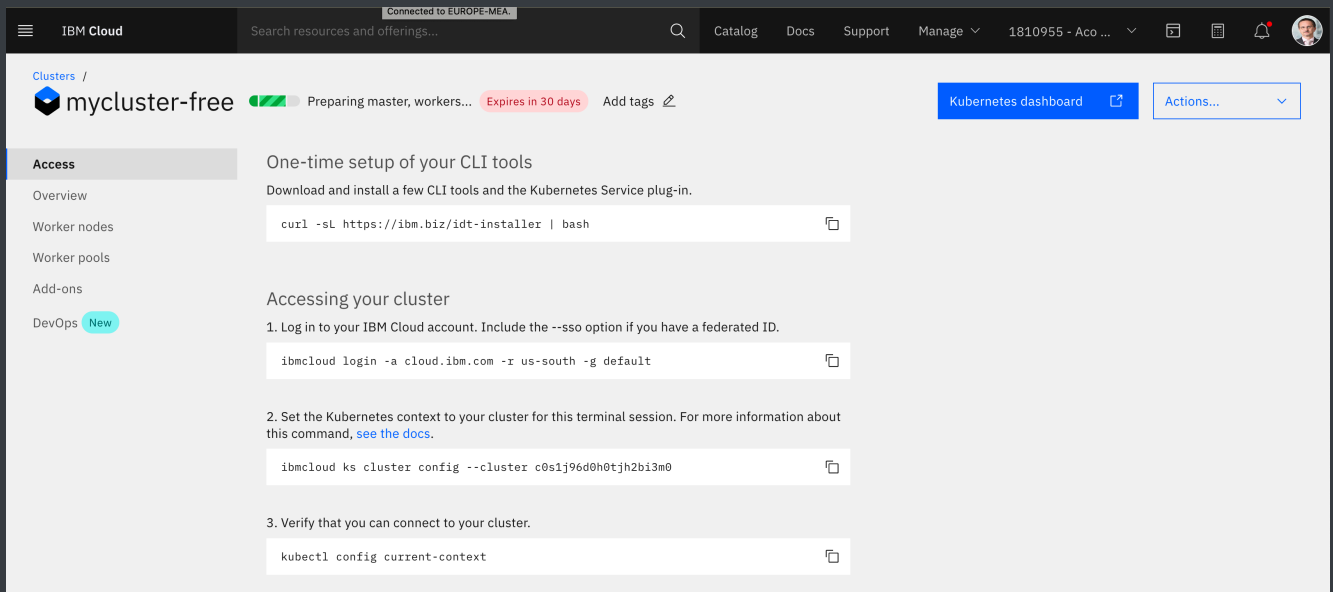
1. In your web browser, go to <https://cloud.ibm.com/> and login with your IBM Cloud account. If you don't have IBM Cloud account yet, create it at <https://cloud.ibm.com/register>
2. In the menu on top, select **Catalog**, then type into the search box: Kubernetes.



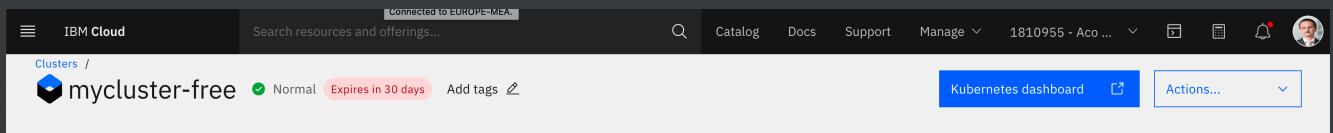
3. Select **Kubernetes Service**.
4. You will get a screen where you can configure and instantiate your IBM Kubernetes Service. Since we will create a no charge Kubernetes cluster, select **Free** in the **Pricing plan** field.
5. Note the field Cluster name, it tells you the name of your cluster. Leave other fields unchanged and click **Create**.



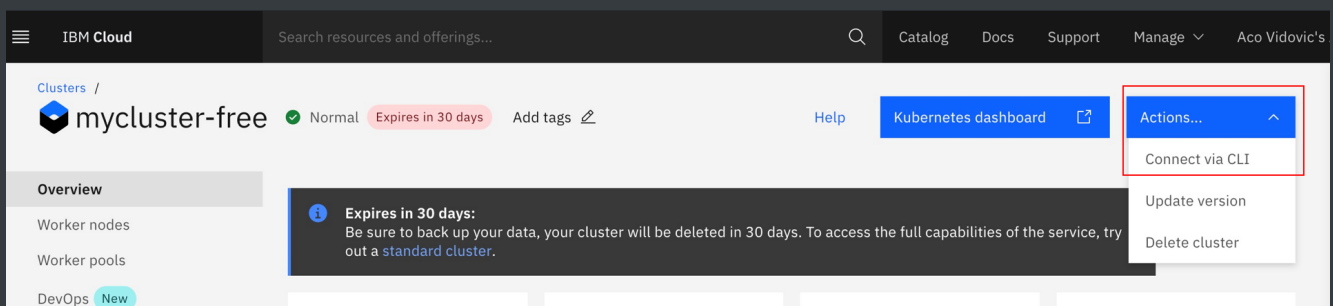
6. On the next screen, you will see your newly created Kubernetes cluster being prepared. You can observe its status in a horizontal bar next to the cluster name with some text suggesting what's going on currently (for example: Preparing master...). You can also see that your cluster will expire in 30 days. This is when the cluster with all its content will be automatically deleted. But you will be able to create another free Kubernetes cluster.



7. Allow about 15 minutes (give or take) until your free K8S cluster is ready. You will know the cluster is ready for use when you see it in status **Normal** as shown on next screen.




8. Once your cluster is ready, connect to it via Command Line Interface (CLI) by clicking on **Actions**, then **Connect via CLI**.



9. Follow the instructions in the pop up window shown below. They will guide you in logging in to your IBM Cloud account and establishing connection to your Kubernetes cluster from CLI. If this is the first time you work with IBM Cloud or Kubernetes on IBM Cloud, you will be guided in downloading all necessary CLIs and their plug-ins.


### Connect via CLI

Cluster status:  Normal

If this is your first time connecting to an IBM Cloud cluster, see the [full setup directions](#).


1. Log in to your IBM Cloud account. Include the --sso option if using a federated ID.

```
ibmcloud login -a cloud.ibm.com -r eu-de -g Default
```




2. Set the Kubernetes context to your cluster for this terminal session. For more information about this command, [see the docs](#).

```
ibmcloud ks cluster config --cluster c4hqjenf0h2jjcf0rqgg
```



3. Verify that you can connect to your cluster.

```
kubectl config current-context
```



Now, you can run `kubectl` commands to manage your cluster workloads in IBM Cloud! For a full list of commands, see the [Kubernetes docs](#).

**Tip:** Plan to use multiple clusters? Repeat these steps for each cluster. Then, you can use the `kubectl config use-context` command to switch your context to a different cluster.

10. With this your Kubernetes cluster is ready for use and you have all necessary CLIs to work with it. Congratulations!

## End of lab