

Deploying your first application on Code Engine using Python



Estimated Time: 15 mins

In this lab you will learn how to deploy a **Hello World** web application from GitHub on Code Engine. IBM Cloud Code Engine has been made available to you through this lab environment.

Learning Objectives:

After completing this lab you will be able to:

1. Start Code Engine service to create applications
2. Use the code engine service to deploy an application and create a remote access URL for the application.
3. List the applications you have deployed.

Setting up Code Engine

1. On the menu in your lab environment, click **Cloud** dropdown and choose **Code Engine**. The code engine set up panel comes up. Click **Create Project**.

The screenshot shows a software interface with a dark theme. At the top is a menu bar with options: File, Edit, Selection, View, Go, Run, Terminal, Help. Below the menu is a sidebar with icons for SKILLS N..., DATABASES, BIG DATA, CLOUD, OTHER, and Open IBM Cloud. The CLOUD section is expanded, showing 'Code Engine INA...' which is highlighted with a red box. The main panel title is 'Code Engine'. To the right of the title is a button labeled 'NOT READY' which is also highlighted with a red box. Below the title, the version '1.39.6' is shown. A descriptive text block reads: 'Use Code Engine directly in your Lab environment. To deploy serverless apps using Code Engine you'll need a project. Code Engine Projects are provided by Skills Network at no charge.' At the bottom of this panel is a blue 'Create Project' button, which is also highlighted with a red box.

2. The code engine environment takes a while to prepare. You will see the progress status being indicated in the set-up panel.

This screenshot shows the same software interface after some time has passed. The 'NOT READY' button has changed to 'PREPARING', indicating the system is still in the setup phase. The rest of the interface remains the same, including the sidebar, main panel title, version number, and 'Create Project' button.

3. Once the code engine set up is complete, you can see that it is active. Click on **Code Engine CLI** to begin the pre-configured CLI in the terminal below.

The screenshot shows the Skills Network interface with the following details:

- Left Sidebar:** Includes icons for File, Edit, Selection, View, Go, Run, Terminal, Help, and various project categories like Databases, Big Data, Cloud, and Other.
- Project Details:** The "Code Engine" project is selected and highlighted with a red box around the "ACTIVE" status. A green box highlights the "READY TO USE" button.
- Project Summary:** Version 1.39.6 is listed. A message states: "Use Code Engine directly in your Lab environment. To deploy serverless applications. Code Engine Projects are provided by Skills Network at no charge".
- Actions:** A blue "Delete Project" button is visible.
- Navigation:** Summary, Project Information, Details tabs are present.
- Text Content:** "Your Skills Network Code Engine Project is now ready to use. You can now start developing and deploying serverless applications." and "For important information about your project view the Project Information section. If you want to learn more about using Code Engine as an IBM Cloud Service, please check out the Details section."
- Call-to-Action:** A blue "Code Engine CLI" button is highlighted with a red box.

4. You will observe that the pre-configured CLI startup and the home directory is set to the current directory. As a part of the pre-configuration, the project has been set up and Kubeconfig is set up. The details that are shown on the terminal.

```
ibmcloud ce project current
theia@theiadocker-lavanyas:/home/project$ ibmcloud ce project current
Getting the current project context...
OK

Name:      Code Engine - sn-labs-lavanyas
ID:       ee5183a9-4516-4bd1-8f4e-4a8615cafd81
Subdomain: v9oc2xsjxaz
Domain:   us-south.codeengine.appdomain.cloud
Region:   us-south

Kubernetes Config:
Context:      v9oc2xsjxaz
Environment Variable: export KUBECONFIG="/home/theia/.bluemix/plugins/code-engine/Code Engine
                     sn-labs-lavanyas-ee5183a9-4516-4bd1-8f4e-4a8615cafd81.yaml"
theia@theiadocker-lavanyas:/home/project$
```

Deploying the first application

You will now use the CLI to deploy the Hello World application.

- Run the following command to see the list of applications that exist.

```
ibmcloud code-engine application list
```

There will be no applications if this is the first time you are running the lab.

- You can alternatively use the short for `ibmcloud ce app` in the place of `ibmcloud code-engine application`.

```
ibmcloud ce app list
```

3. You will deploy the simple flask web application which serves one REST API endpoint at the root level and returns the string Hello World. The code is provided in <https://github.com/ibm-developer-skills-network/danum-pythonflaskserver>. Run the following command to deploy the application.

```
ibmcloud ce application create --name helloworld --build-source https://github.com/ibm-developer-skills-network/danum-pythonflaskserver --image us.icr.io/${SN_ICR_NAMESPACE}/helloworld --registry-secret icr-s...
```

```
theia@theiadocker-lavanyas:/home/project$ ibmcloud ce application create --name helloworld --bu  
https://github.com/ibm-developer-skills-network/danum-pythonflaskserver --image us.icr.io/${SN  
ACE}/helloworld --registry-secret icr-secret --port 5000  
Creating application 'helloworld'...  
Submitting build run 'helloworld-run-221117-001735274'...  
Creating image 'us.icr.io/sn-labs-lavanyas/helloworld:221117-0517-kam0s'...  
Waiting for build run to complete...  
Build run status: 'Running'  
Build run completed successfully.  
Run 'ibmcloud ce buildrun get -n helloworld-run-221117-001735274' to check the build run status.  
Waiting for application 'helloworld' to become ready.  
Configuration 'helloworld' is waiting for a Revision to become ready.  
Ingress has not yet been reconciled.  
Waiting for load balancer to be ready.  
Run 'ibmcloud ce application get -n helloworld' to check the application status.  
OK
```

<https://helloworld.vaw1bizsrq.us-south.codeengine.appdomain.cloud>

```
theia@theiadocker-lavanyas:/home/project$
```

4. You will see that the command creates the application and also internally sets up the required infrastructure. It takes a few seconds and it finally gives a confirmation along with the URL.

Run 'ibmcloud ce application get -n helloworld' to check the application status.

OK

Follow link (cmd + click)

<https://helloworld.vaw1bizsrq.us-south.codeengine.appdomain.cloud>

```
theia@theiadocker-lavanyas:/home/project$
```

5. Press ctrl(Windows)/cmd(Mac) and the link that is created. Alternatively copy the link and paste it in a browser page and press enter. The hello world application page renders as given below.



Hello World!

6. To get the details of the application, run the following command.

```
ibmcloud ce app get --name helloworld
```

It gives detailed information about the application including the time of creation, resources used, number of instances etc..

Congratulations! You have completed this lab successfully and deployed your first application on Code Engine.

Author(s)

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