Lab: Create and deploy chaincode to the IBM Blockchain service on Bluemix

Overview

This lab introduces you to chaincode development by showing you how to create a blockchain service in IBM® Bluemix® and how to deploy your first chaincode to the new service.

Tip: This lab shows some screen captures in the IBM Bluemix interface in the classic view. If you log in to Bluemix and want to work in the classic view, click the avatar in the upper right and select **Switch to Classic** at the bottom of the avatar window.

Important: Because the IBM Blockchain service is in beta, it might be temporarily unavailable or at capacity. If you experience problems in the lab when trying to create the IBM Blockchain service or accessing the IBM Blockchain service dashboard, try accessing the dashboard later.

Prerequisites

To complete this lab, be sure you complete the previous two labs “Transfer assets in a business network” and “Explore the IBM Blockchain service on Bluemix.”

You also need:

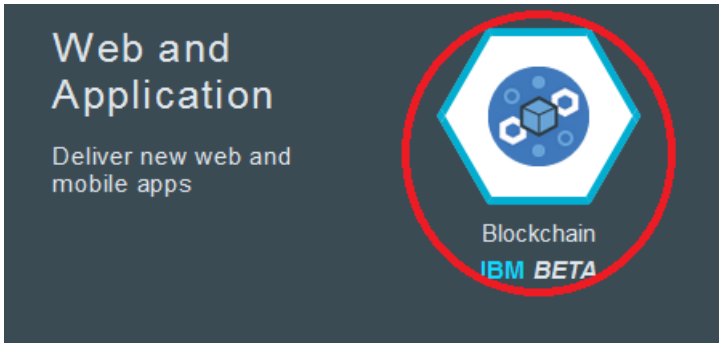
- A Bluemix account
- Firefox or Chrome browser

If you want to edit and compile chaincode yourself, you need:

- A GitHub account and tools from https://github.com/
- The Go programming language compiler from https://golang.org/dl/

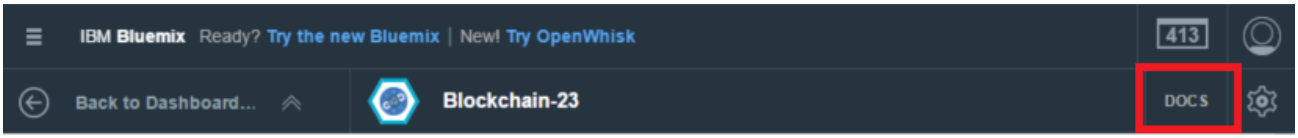
Step 1. Create a new IBM Blockchain service on Bluemix

1. Create a new IBM Blockchain service instance in Bluemix for your chaincode. From a browser, log in to http://www.bluemix.net.
2. Click **CATALOG** from the top bar.
3. Scroll down to the **Web and Application** section and click **Blockchain**. Review the service information.

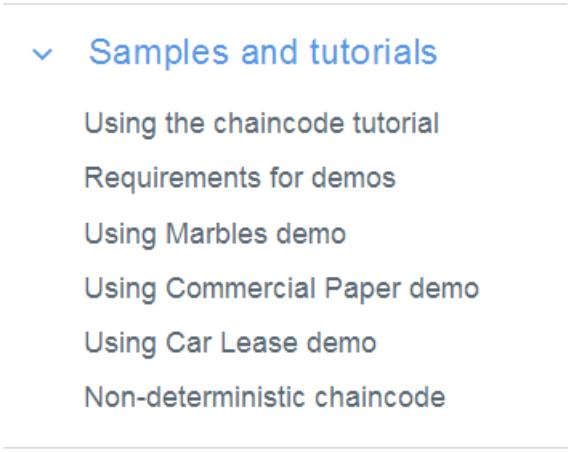


4. Click **Create** to create a new blockchain service. Use the default settings.

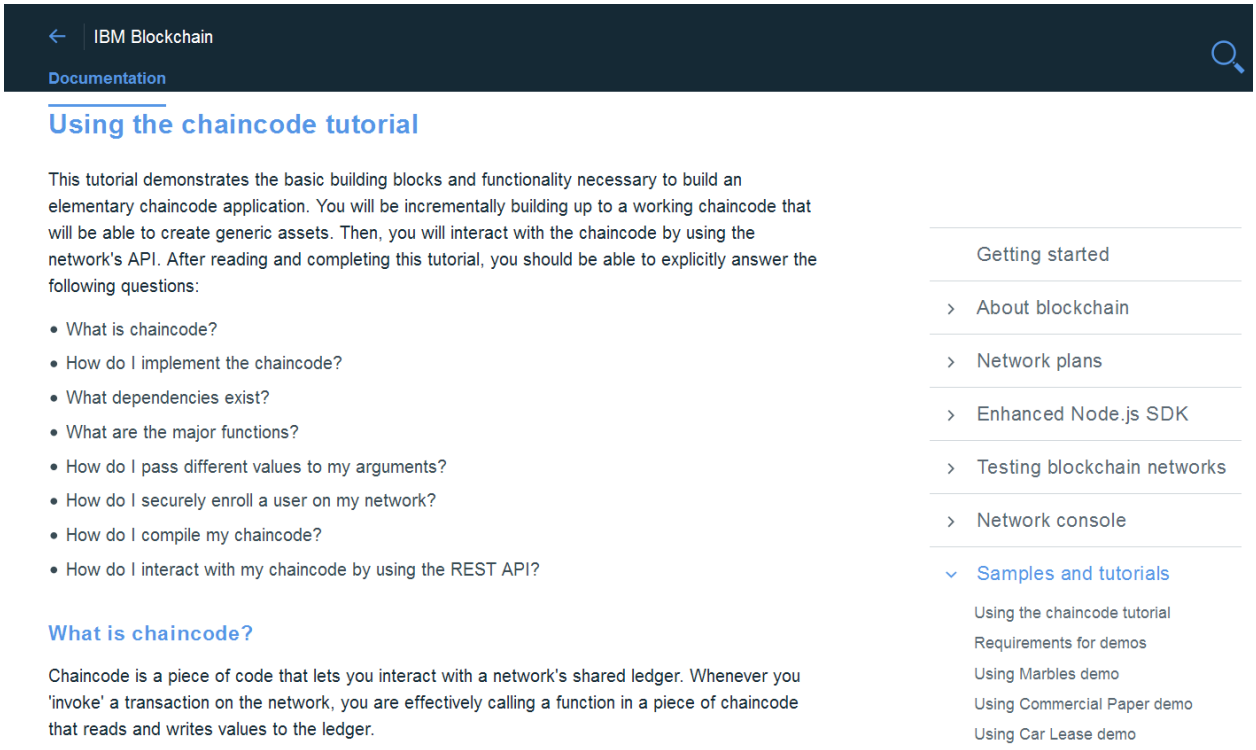
   The service welcome page provides details about IBM Blockchain Network Service Test Environment. Review this page for more information. For more information about blockchain, see About blockchain.
5. Click **Docs** to see the article “Getting started with Blockchain (Beta).”



6. Click **Sample apps and tutorials** in the right navigation.



7. Select “Using the chaincode tutorial.”



Continue to the next page in this lab and **Step 2** for instructions on how to proceed through the chaincode tutorial.

Step 2. Follow the Bluemix tutorial to edit your first chaincode

There are two ways you can approach this tutorial:

If you are a developer who wants to write chaincode

You should follow all the steps. Install the Go compiler and use a Git account and tools to change and deploy your code. At a high level, the tutorial guides you through these steps:

1. Set up the environment.
2. Set up GitHub and fork the example “learn chaincode” repository.
3. Clone the “learn chaincode” fork to your local system; be sure you clone the forked version and not the original.
4. Edit the chaincode_start.go file to add a new capability to invoke and query the chaincode.
5. Commit your local changes with the command `git commit –a`
6. Upload your changes back to your forked repository with the command `git push`

   Tip: If you accidentally clone the original “Hello Chaincode” repository, you can use the following command to point to your fork instead of the original:

   ```
   git remote set-url origin https://github.com/<yourGitID>/learn-chaincode
   ```

7. Interact with your changes by using the Swagger API to deploy, invoke, and query the new chaincode that you made.

If you only want to see how chaincode works

You don’t need to follow the steps for setting up Go and using Git to make changes. Instead, read the earlier sections of the tutorial and simply deploy and work with the finished version of the chaincode directly when you get to the section in the tutorial “Deploying the chaincode.”