Blockchain Education Pointers

# Introduction

The purpose of this document is to provide guidance on educational activities for new SRE (Site Reliability Engineering) team members. The document is generally structured sequentially in the order of suggested education.

# High-level Overview of Blockchain Technology

There is a high-level overview of Blockchain technology at <https://www.ibm.com/blockchain>.

# Create a Bluemix Account

1. Register for an IBM internet ID using your IBM email address. This should allow longer access to Bluemix than an account which isn’t associated with an IBM email address. The registration page is <https://www.ibm.com/account/profile/us?page=reg>
2. Go to Bluemix at <https://console.ng.bluemix.net> and choose “Sign Up”.
3. Click on a link similar to “Already have an IBM ID?”
4. Complete the form and use the IBM ID that was recently created.
5. You will likely receive an email with registration confirmation. Make sure to validate your email address as requested in the note.
6. Login to Bluemix at <https://console.ng.bluemix.net>

# Use Blockchain Examples on Bluemix

## Create a new Blockchain network

1. After logging into Bluemix, click on “Catalog”.
2. On the left, navigate to Services > Application Services.
3. Click on the Blockchain service.
4. Then press the “Create” button on the bottom of the panel that is displayed.

## Work with Bluemix Examples

1. Select the “Dashboard” choice from the menu (horizontal bars) on the top left.
2. Under “All Services”, click on the name of the Blockchain network that was just created.
3. Press the “Launch” button in order to work with this Blockchain network.
4. Go to the “Demo Chaincode” tab.
5. Press the “Deploy” button to deploy Example02. It may take a couple of minutes for the chaincode to deploy. You can check on the “Network” tab that a chaincode is associated with four validating peers to confirm that the deployment has finished.
6. Then use the Interact > Show Actions option to display operations that can be performed on the chaincode. Experiment with the available operations.
7. Also deploy and work with the Marbles application.

# Read Introductory Documentation for the Blockchain Service on Bluemix

Read the following sections of the Blockchain service documentation on Bluemix (found at <https://console.ng.bluemix.net/docs/services/blockchain/ibmblockchainmonitor.html>).

* About blockchain
* Network plans
* Dashboard monitor
* Samples and tutorials (for more information on samples than just deploying them directly from the “Demo Chaincode” tab)

# Hello Chaincode Tutorial

This tutorial provides an initial experience with chaincode, the business logic that runs on blockchain. Chaincode is built locally and then deployed to the Blockchain service on Bluemix. Refer to the “Using the Hello Chaincode tutorial” section at <https://console.ng.bluemix.net/docs/services/blockchain/ibmblockchain_tutorials.html>

# Node.js Education

The Nodeschool tutorials at [http://nodeschool.io/#workshoppers](http://nodeschool.io/%23workshoppers) are a good place to learn by example. For each module, there is a list of exercises with a problem statement. Then you write a solution and the module has a validation function that indicates if the solution is correct. Solutions are also available which might need to be consulted in many cases.

Another tutorial that may be helpful is <http://www.tutorialspoint.com/nodejs/>

# Hyperledger Fabric Client

Read about the Hyperledger Fabric Client which provides a way to access the blockchain network through Node.js. Then use the example “helloblockchain” Node.js application which deploys chaincode to a blockchain network (running on Bluemix). The example is available at [https://console.ng.bluemix.net/docs/services/blockchain/etn\_sdk.html#nodesample](https://console.ng.bluemix.net/docs/services/blockchain/etn_sdk.html%23nodesample).

# Go Education

The book “An Introduction to Programming in Go” (<https://www.golang-book.com/books/intro>) is a good overview which is arranged according to aspects of the language.

# Hyperledger Documentation

The documentation for the Hyperledger project is available at <http://hyperledger-fabric.readthedocs.io/en/latest/>. Scanning this would be helpful in case it is needed for future reference.

# Docker Education

If you are using Windows 7, you will need to use the Docker Toolbox rather than Docker for Windows (which is only supported on newer versions such as Windows 10). Refer to an overview description at <https://docs.docker.com/toolbox/overview/>.

If you are using a Mac, refer to the following site on installing Docker: <https://docs.docker.com/docker-for-mac/>

Once Docker is installed, follow the Docker Tutorial at <https://docs.docker.com/engine/getstarted/>.