Getting Started

To do the Blockchain training laboratory exercises, you need to install the necessary software and files.

Install Software

1. Download and install Git Bash.

   https://git-scm.com/downloads

2. Download and install NodeJS.

   https://nodejs.org/en/download/

   Note: Use the LTS version

   Installing Node.js will also install the NodeJS Package Manager (NPM).

3. Open a Git Bash terminal.

   In the succeeding steps, when you see the prompt below, it means that a command needs to be executed in the Git Bash terminal.

   ```
   >
   ```

4. Change the version of NPM.

   ```
   > npm install npm@5.6.0 -g
   ```

5. Download and install VSCode.

   https://code.visualstudio.com/download

6. Download and install Python.

   https://www.python.org/downloads/windows/

   Note: Use version 2.x.x

7. Download and install Docker Desktop.

   https://www.docker.com/products/docker-desktop

   Note: You may need to create a Docker ID to download the software.

8. Test the Docker Desktop installation

   ```
   ```

```
> docker version
> docker run hello-world
```

IMPORTANT: When you continue with the succeeding steps and encounter at least one of the following errors:

```
Mount C. This shared resource does not exist.
```

or

```
Drive sharing failed for an unknown reason
```

or

```
Drive has not been shared
```

refer to the troubleshooting section at the end of this document to fix the error.

9. Download and install Postman.

   https://www.getpostman.com/downloads/

10. Install the Hyperledger Fabric platform-specific binaries.

```
> mkdir -p /c/blockchain-training
> cd /c/blockchain-training
> curl -sSL http://bit.ly/2ysbOFE | bash -s -- 1.4.1 1.4.1 0.4.15
```

Setup the Git Environment

1. Run the following commands.

```
> git config --global core.autocrlf false
> git config --global core.longpaths true
```

2. Check the setting of these parameters with the following commands.

```
> git config --get core.autocrlf
> git config --get core.longpaths
```

Install Prerequisite NodeJS Packages

1. Install Visual Studio C++ Build Tools.

```
> npm install --global windows-build-tools
```

2. Install GRPC module.

```
> npm install --global grpc
```

Copy the Training Materials

1. Clone the blockchain tutorial

```
> cd /c/blockchain-training
> git clone https://github.com/pong-pantola/blockchain-tutorial.git
```

2. Clone the NoedJS tutorial

```
> cd /c/blockchain-training
> git clone https://github.com/pong-pantola/nodejs-tutorial.git
```

Test the Setup

1. Start the blockchain network.

```
> cd /c/blockchain-training/blockchain-tutorial/chaincode
> ./quick-setup.sh blue-coin-no-acl blue-coin 1.0
```

This may take several minutes.

You should see the message:

```
Quick setup for chaincode blue-coin is complete.
```

2. Invoke a command in the chaincode.

```
> docker exec cli0.org1 peer chaincode invoke \
  -o orderer.example.com:7050 \
```

```
  -C mychannel -n blue-coin \
  -c '{"function":"generateInitialCoin","Args":["Org1MSP"]}'
```

You should see a message that contains the following:

```
chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result:
status:200 payload:"{\"status\":200,\"message\":\"Successfully generated
blue coins\",\"payload\":{\"mspId\":\"Org1MSP\",\"amt\":500}}"
```

3. Install the necessary packages in the sample NodeJS program.

```
> cd /c/blockchain-training/blockchain-tutorial/client/blue-coin
> npm install
```

This may take several minutes.

4. Run the sample NodeJS program.

```
> node enrollAdmin.js 1
```

You should see the message:

```
Enrolling Administrator admin of org1...
Administrator admin of org1 enrolled successfully.
```

Troubleshooting Share Error

Do this step **ONLY** if you encounter this error:

```
Mount C. This shared resource does not exist.
```

or

```
Drive sharing failed for an unknown reason
```

or

```
Drive has not been shared
```

1. Click the Start Window icon and select Settings (i.e., Gear icon).
2. In the `Find a Setting` textbox, type `accounts`.
3. Choose `Add, edit, or remove other users`.
4. Take note of the `Administrator` account name that starts with `AzureAD\`.

   For example if you see `AzureAD\JUANDELACRUZ`, please remember the account name `JUANDELACRUZ`.

   You will create an account later with exactly the same name.
5. Choose `Add someone else to this PC`.
6. Click `I don't have this person's sign-in information`.
7. Click `Add a user without a Microsoft account`.
8. In the `User name` textbox, type the account name you took note earlier.

   Note: Do not type `AzureAD\`
9. In the password textbox, you can use a different password from the one you use when logging in to your machine.
10. Fill-up the security questions/answers textboxes.
11. Click `Next`.
12. The newly created account should appear under `Other users`.
13. Click the newly created account.
14. Click `Change account type`.
15. In the `Account type` drop-down list, select `Administrator`.
16. Click `OK`.
17. In the system tray (near the system time), look for the icon of Docker Desktop.

    Docker Desktop icon is a combination of a ship and a whale.

    If you cannot find this icon, possibly it is in the `Hidden Icons` of the system tray. Click the up arrow `^` near the system time to show the `Hidden Icons` tray.
18. Click the icon of Docker Desktop.

    A pop-u menu will appear.
19. Click `Settings`.
20. Click `Shared Drives`.
21. Click the checkbox for `C`.

22. Click `Apply`.

23. When prompted for a username and password, type the credentials of your newly created account.