

## Hyperledger Fabric v1.4.6

### Documentation Links

1. **Hyperledger Fabric Docs** [Web](#) [PDF](#)
  - a. Official documentation for fabric v1.4.6
2. **Node**
  - a. [Node fabric chaincode SDK Documentation](#)
    - > Official documentation for chaincode API's
    - > Useful for implementing chaincode
  - b. [Node fabric app SDK Documentation](#)
    - > Official documentation for application API's
    - > Useful for implementing client application

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## Part 1: Fabric Installation

### 1A. Prerequisites:

1. A UNIX environment (Linux or MacOS)
  - \* Windows Users : Run a linux virtual machine with at least **20 GB** of space.
2. **Curl**: cmdline tool to transfer data with URLs
  - a. Install: `sudo apt install curl`
3. **Docker and Docker Compose** : To create standard environments for building and running apps and chaincode  
(I have the [old version](#) running for this application, as newer versions give issues)
  - a. Install:
    - i. Linux : Perform steps in order
      - a) [Step 1](#) (To install Docker Engine Community -> Do *install using repository* section)
      - b) [Step 2](#) (To run docker w/o sudo -> Do *Manage Docker as a non-root user* section **only**)
      - c) [Step 3](#) (To install Docker Compose -> Do *Install compose* section)
    - ii. [MacOS](#)

4. **Node.js:** A JavaScript runtime to run apps and chaincodes
  - a. Install: [Official Website](#)
5. **Python 2** : *sudo apt install python*
6. [Xcode](#) (MacOS only)

## 1B. Download Fabric samples and binaries:

```
$ curl -sSL http://bit.ly/2ysbOFE | bash -s -- 1.4.6 1.4.6 0.4.18
```

The installation has few inbuilt applications like 'fabcar'. We will use one of the network configurations(1 ord, 1 org, 1 peer) available here for fabchat.

Can take a look for other material here : (<https://github.com/hyperledger/fabric-samples>)

## 1C. To check if everything works?

We can run one such application 'fabcar' to check that installation was successful. The steps are given below:

1. Launch blockchain network
 

```
$ cd fabric-samples/fabcar // go to fabcar client app. Folder
$ ./startFabric.sh javascript // start the network & use javascript chaincode
```
2. Install app dependencies defined in *package.json*

```
$ cd fabric-samples/fabcar/javascript // go to javascript code folder
$ npm install (Install app. dependencies)
```
3. Enroll admin (enrolls the CA admin)

```
$ node enrollAdmin.js // node is javascript runtime environment
```
4. Register and enroll user1

```
$ node registerUser.js
```
5. Query ledger to list all cars

```
$ node query.js
```

If every step is executed w/o any issues, you should finally see the output of query like this:

*Transaction has been evaluated, result is:*

```
[{"Key":"CAR0","Record":{"color":"blue","docType":"car","make":"Toyota","model":"Prius","owner":"Tomoko"}}, {"Key":"CAR1","Record":{"color":"red","docType":"car","make":"Ford","model":"Mustang","owner":"Brad"}}, {"Key":"CAR2",.....}]
```