**Hyperledger Fabric version 1.2.1**

**Ubuntu OS version 16.04.5 LTS (Xenial)**

# **MANUAL INSTALLATION**

These are the manual steps to install Hyperledger Fabric version 1.2.1. This process will create the following docker containers:

* Solo orderer: orderer1.[ORDERER\_ORG]:7050
* Orderer Root CA: rca.[ORDERER\_ORG]:7054
* Peer Root CA: rca.[PEER\_ORG]:8054
* Orderer Intermediate CA: ica.[ORDERER\_ORG]:10054
* Peer Intermediate CA: ica.[PEER\_ORG]:11054
* Peers:
  + peer1.[PEER\_ORG]:7051
  + peer2.[PEER\_ORG]:8051
* World State Database
  + couchdb-peer1.[PEER\_ORG]:5984
  + couchdb-peer2.[PEER\_ORG]:6984

The setup installs the chaincode “chaincode\_example02”, part of the Hyperledger Fabric samples, instantiates the chaincode, performs the query, invokes the chaincode, and verify the result with the final query.

## **Prerequisites:**

Note: The installation of prerequisites is only required if the binaries do not exist in the default OS setup. The highlighted binaries below are required to run Hyperledger Fabric.

1. Create user account ‘dlt’ with sudo access
2. Clone the ‘us-dlt’ GIT repo
   1. % git clone [https://github.com/daretobebetter/us-dlt.git](https://meet.google.com/linkredirect?authuser=0&dest=https%3A%2F%2Fgithub.com%2Fdaretobebetter%2Fus-dlt.git)
3. Copy ‘hyperledger’ and ‘prereq’ directories to /opt
   1. % cd us-dlt/ledger
   2. % sudo cp -r hyperledger prereq /opt
4. Install the prerequisites
   1. % cd /opt/prereq
   2. % ./setup-prereq.sh
5. Verify version of binaries:
   1. To verify version of Docker
      1. % docker –version
   2. To verify the version of Docker Compose
      1. % docker-compose –version
   3. To verify the version of Go
      1. % go version
   4. To verify the version of Node.js
      1. % node –version
   5. To verify the version of NPM
      1. % npm –version
   6. To verify the version of python
      1. % python –version

## **Install Hyperledger Fabric:**

1. Go to the directory where the fabric is installed
   1. % cd /opt/hyperledger/fabric/fabric-net/scripts
2. Edit env.sh, replace all keywords of ‘unitedsolutions.biz’ to proper organization domain
3. Edit start-root-ca.sh and start-intermediate-ca.sh to replace the proper organization parameters for ST, L, O and OU
4. Start the fabric network. Note: the fabric is configured as a single organization with two peers. The script will build the docker containers for the solo orderer, two peers for the single organization, and the associated world state databases (CouchDB). Then, it installs an example chaincode, instantiates the chaincode, performs a sample query, invokes the chaincode to perform changes to the data, then performs the query to verify the changes
   1. % sudo ./start.sh