

## Hyperledger fabric first network tutorial

### Installing Prerequisites for Hyperledger Fabric:

- **CURL** : curl is a command line tool to transfer data to or from a server, using any of the supported protocols (HTTP, FTP, IMAP, POP3, SCP, SFTP, SMTP, TFTP, TELNET, LDAP or FILE). curl can transfer multiple file at once.
- **GO Programming Language with setup of path variable**: GoLang is a very powerful programming language developed by Google. It is a compiled programming language. It means, Go source codes are converted to machine code or commonly known as executable file. Then you can run these executable files on other computers. Unlike Java that converts source code to byte code, then runs these byte codes using JVM (Java Virtual Machine), Go does not use any VM (Virtual Machines).
- **Docker & Docker Compose**: Compose is a tool for defining and running multi-container Docker applications. With Compose, you use a YAML file to configure your application's services. Then, with a single command, you create and start all the services from your configuration. ... Run docker-compose up and Compose starts and runs your entire app
- **Node.js Runtime & NPM** : js runtime is basically what will understand your javascript code and execute it to produce a result. Npm package manager is a tool which will allow you to install third party libraries (other people's code) by using the command line. npm install express.
- **PYTHON**

To install all these prerequisites run following commands in terminal window one by one, everything should go smooth.

```
sudo apt-get install curl
sudo apt-get install golang-go
export GOPATH=$HOME/go
export PATH=$PATH:$GOPATH/bin
sudo apt-get install nodejs
sudo apt-get install npm
sudo apt-get install python
sudo apt-get install docker
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
sudo add-apt-repository "deb [arch=amd64]
https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"
sudo apt-get update
apt-cache policy docker-ce
sudo apt-get install -y docker-ce
sudo apt-get install docker-compose
sudo apt-get upgrade
```

Till now the environment is ready to install Hyperledger Fabric, Now we will download fabric samples. To do that run following commands in terminal one by one...

```
sudo curl -sSL https://raw.githubusercontent.com | bash -s -- 1.4.6 1.4.6 0.4.18
```

```
sudo chmod 777 -R fabric-samples
```

Now go into first-network directory which is inside fabric-samples folder and then we will run generate script that will create certificates and keys for the entities on our first blockchain network. This will also create genesis block (first block on blockchain)

docker ps : docker ps lists **the Docker containers that are currently running on our system.**

```
cd fabric-samples/first-network  
sudo ./byfn.sh generate
```

Bring your first network up by running following command. *byfn* stands for “**Build Your First Network**”

```
sudo ./byfn.sh up
```

If everything works fine you should see start screen of fabric network. To bring network down following command is used.

```
sudo ./byfn.sh down
```