

## INSTALLATION GUIDE

1. In windows power shell (admin mode)
  - To enable windows subsystem for Linux: `dism.exe/online/enable feature/featurename:Microsoft-Windows-Subsystem-Linux/all/norestart` •
  - To enable virtual machine feature: `dism.exe/online/enable feature/featurename:VirtualMachinePlatform/all/norestart`
  - To set wsl-2 as default version: `wsl --set-default-version 2`
2. Install ubuntu 20.04 LTS from windows store
3. Install windows terminal from windows store
4. Download linux kernel update package:  
`https://wslstorestorage.blob.core.windows.net/wslblob/wsl_update_x64.msi`
5. Open windows terminal and open an ubuntu 20.04 LTS tab
6. Type the commands: `sudo apt update` and `sudo apt upgrade`
7. Download docker:  
`https://desktop.docker.com/win/stable/amd64/Docker%20Desktop%20Installer.exe`
8. To enable docker for Ubuntu:  
Go to settings->Resources->WSL Integration->Enable ubuntu 20.04 Hit Apply and Restart.  
This helps in enabling docker in ubuntu command line.
9. Run: `docker --version`  
`docker-compose --version`  
`sudo apt update`  
`sudo apt upgrade`  
`sudo apt-get install curl`  
`curl -v`  
`sudo wget https://golang.org/dl/go1.16.3.linux-amd64.tar.gz`  
`tar xvf go1.16.3.linux-amd64.tar.gz`
10. Set GO path:  
`export GOPATH=$HOME/go`  
`export PATH=$PATH:$GOPATH/bin`  
`go version`
11. Run: `git --version`
12. Install Hyperledger Fabric and fabric samples
13. `mkdir -p $HOME/go/src/github.com/`  
`cd $HOME/go/src/github.com/`  
`curl -sSL https://bit.ly/2ysbOFE/bash -s | bash -s`  
`cd $wsl`  
`cd go/src/github.com/fabric-samples`  
`cd test-network`  
`./network.sh down`

```

./network.sh up
docker images
docker ps -a
14.cd fabric-samples/test-network
./network.sh down
./network.sh up
15.To check the components of the test network
docker ps -a
16.To create channel:
./network.sh createChannel
./network.sh createChannel -c channel1
./network.sh createChannel -c channel2
./network.sh up createChannel
17.To start a chaincode on the channel:
./network.sh deployCC -ccn basic -ccp ../asset-transfer-basic/chaincode-go -ccl go
18.For interaction with the network
export PATH=${PWD}/../bin:$PATH
export FABRIC_CFG_PATH=$PWD/../config/
19. For environment variable
export CORE_PEER_TLS_ENABLED=true
export CORE_PEER_LOCALMSPID="Org1MSP"
export
CORE_PEER_TLS_ROOTCERT_FILE=${PWD}/organizations/peerOrganizations/org1.example.com/peers/peer0.org1.example.com/tls/ca.crt
export
CORE_PEER_MSPCONFIGPATH=${PWD}/organizations/peerOrganizations/org1.example.com/users/Admin@org1.example.com/msp
export CORE_PEER_ADDRESS=localhost:7051
peer chaincode invoke -o localhost:7050 --ordererTLSHostnameOverride orderer.example.com --tls --cafile "${PWD}/organizations/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem" -C mychannel -n basic --peerAddresses localhost:7051 --tlsRootCertFiles "${PWD}/organizations/peerOrganizations/org1.example.com/peers/peer0.org1.example.com/tls/ca.crt" --peerAddresses localhost:9051 --tlsRootCertFiles "${PWD}/organizations/peerOrganizations/org2.example.com/peers/peer0.org2.example.com/tls/ca.crt" -c '{"function":"InitLedger","Args":[]}'
peer chaincode query -C mychannel -n basic -c '{"Args":["GetAllAssets"]}'
peer chaincode invoke -o localhost:7050 --ordererTLSHostnameOverride orderer.example.com --tls --cafile "${PWD}/organizations/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem" -C mychannel -n basic

```

```
--peerAddresses localhost:7051 --tlsRootCertFiles
"${PWD}/organizations/peerOrganizations/org1.example.com/peers/peer0.org1.example.com/tls/ca.crt" --peerAddresses localhost:9051 --tlsRootCertFiles
"${PWD}/organizations/peerOrganizations/org2.example.com/peers/peer0.org2.example.com/tls/ca.crt" -c '{"function":"TransferAsset","Args":["asset6","Christopher"]}'
```

19.To bring the network down

```
./network.sh down
```

20.To bring up the network with Certificate Authorities

```
./network.sh up -ca
tree
organizations/peerOrganizations/org1.example.com/users/Admin@org1.example.com/
```