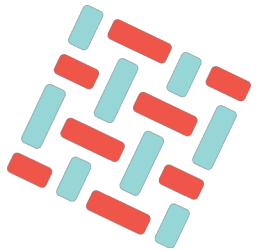
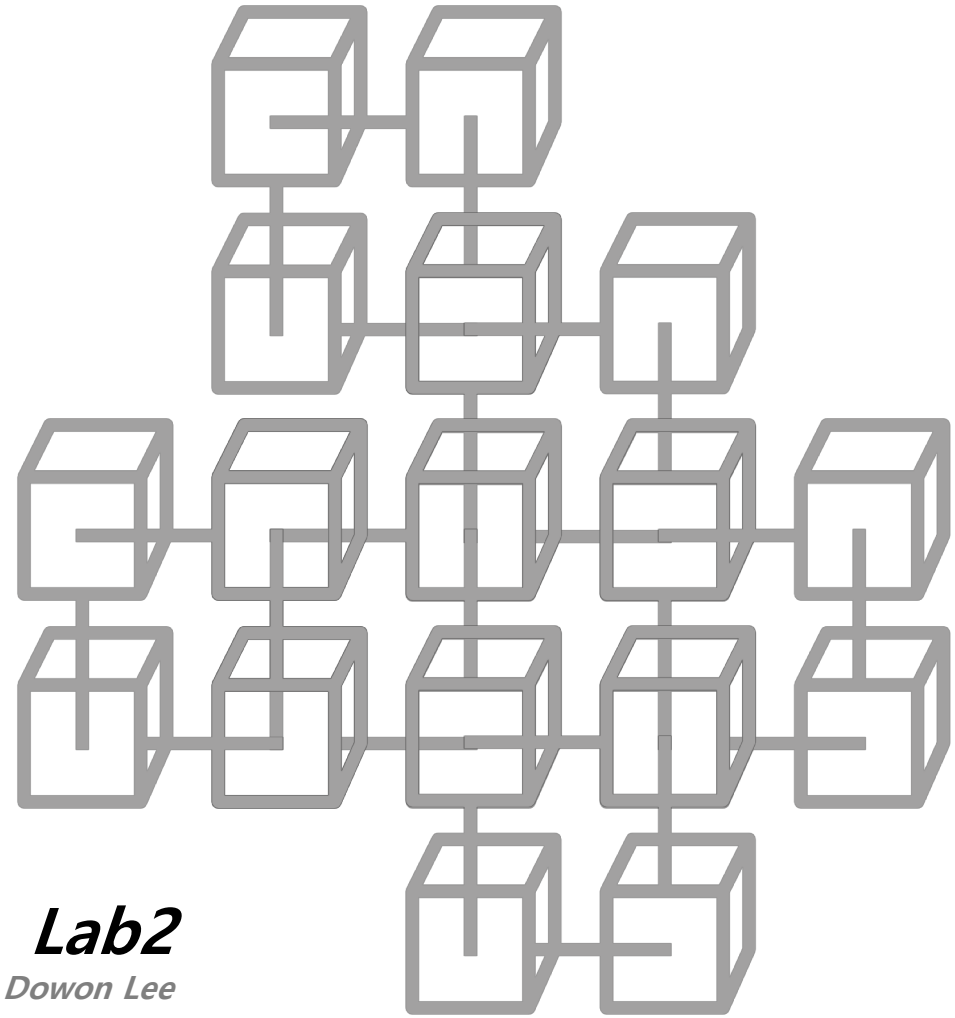


HYPERLEDGER
FABRIC



Lab2

written by Dowon Lee

BYFN 실행

- first-network 디렉토리에서 실행

```
$ cd ~/fabric/fabric-samples/first-network
```

- 인증서 실행

```
$ ../bin/cryptogen generate --config=./crypto-config.yaml
```

- Orderer Genesis Block 실행

```
$ export FABRIC_CFG_PATH=$PWD
$ ../bin/configtxgen -profile TwoOrgsOrdererGenesis -outputBlock ./channel-artifacts/genesis.block
```

- Channel Transaction artifacts 생성

```
$ export CHANNEL_NAME=mychannel
$ ../bin/configtxgen -profile TwoOrgsChannel ₩
        -outputCreateChannelTx ./channel-artifacts/channel.tx -channelID $CHANNEL_NAME
```

BYFN 실행

- Org1, Org2에 Anchor Peer artifacts 생성

```
$ ../bin/configtxgen -profile TwoOrgsChannel -outputAnchorPeersUpdate
        ./channel- artifacts/Org1MSPanchors.tx -channelID $CHANNEL_NAME -asOrg Org1MSP
$ ../bin/configtxgen -profile TwoOrgsChannel -outputAnchorPeersUpdate
        ./channel- artifacts/Org2MSPanchors.tx -channelID $CHANNEL_NAME -asOrg Org2MSP
```

- Network 기동

```
$ docker-compose -f docker-compose-cli.yaml up -d
$ docker exec -it cli bash
```

- Docker CLI 실행

```
$ export CHANNEL_NAME=mychannel
$ peer channel create -o orderer.example.com:7050 -c $CHANNEL_NAME ₩
        -f ./channel-artifacts/channel.tx --tls $CORE_PEER_TSL_ENABLED ₩
        --cafile
/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem
```

BYFN 실행

- Join Peers

```
## peer0.org1
$ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/users/Admin@org1.example.com/msp
$ CORE_PEER_ADDRESS=peer0.org1.example.com:7051
$ CORE_PEER_LOCALMSPID="Org1MSP"
$ CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/peers/peer0.org1.example.com/tls/ca.crt
$ peer channel join -b mychannel.block
```

```
## peer1.org1
$ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/users/Admin@org1.example.com/msp
$ CORE_PEER_ADDRESS=peer1.org1.example.com:7051
$ CORE_PEER_LOCALMSPID="Org1MSP"
$ CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/peers/peer1.org1.example.com/tls/ca.crt
$ peer channel join -b mychannel.block
```

BYFN 실행

- Join Peers

```
## peer0.org2
$ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/users/Admin@org2.example.com/msp
$ CORE_PEER_ADDRESS=peer0.org2.example.com:7051
$ CORE_PEER_LOCALMSPID="Org2MSP"
$ CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/peers/peer0.org2.example.com/tls/ca.crt
$ peer channel join -b mychannel.block
```

```
## peer1.org2
$ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/users/Admin@org2.example.com/msp
$ CORE_PEER_ADDRESS=peer1.org2.example.com:7051
$ CORE_PEER_LOCALMSPID="Org2MSP"
$ CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/peers/peer1.org2.example.com/tls/ca.crt
$ peer channel join -b mychannel.block
```

BYFN 실행

- Update Anchor Peer Info

```
## anchor1 peer0.org1
$ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/users/Admin@org1.example.com/msp
$ CORE_PEER_ADDRESS=peer0.org1.example.com:7051
$ CORE_PEER_LOCALMSPID="Org1MSP"
$ CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/peers/peer0.org1.example.com/tls/ca.crt
$ peer channel update -o orderer.example.com:7050 -c mychannel -f ./channel-artifacts/Org1MSPanchors.tx --tls $CORE_PEER_TSL_ENABLED --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem
```

BYFN 실행

- Update Anchor Peer Info

```
## anchor2 peer0.org2
$ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/users/Admin@org2.example.com/msp
$ CORE_PEER_ADDRESS=peer0.org2.example.com:7051
$ CORE_PEER_LOCALMSPID="Org2MSP"
$ CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/peers/peer0.org2.example.com/tls/ca.crt
$ peer channel update -o orderer.example.com:7050 -c mychannel -f ./channel-artifacts/Org2MSPanchors.tx --tls $CORE_PEER_TSL_ENABLED --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem
```

BYFN 실행

- Install Chaincode (Chaincode_example02)

```
## peer0.org1
$ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/users/Admin@org1.example.com/msp
$ CORE_PEER_ADDRESS=peer0.org1.example.com:7051
$ CORE_PEER_LOCALMSPID="Org1MSP"
$ CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/peers/peer0.org1.example.com/tls/ca.crt
$ peer chaincode install -n mycc -v 1.0 -p github.com/chaincode/chaincode_example02/go
```

```
## peer1.org1
$ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/users/Admin@org1.example.com/msp
$ CORE_PEER_ADDRESS=peer1.org1.example.com:7051
$ CORE_PEER_LOCALMSPID="Org1MSP"
$ CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/peers/peer1.org1.example.com/tls/ca.crt
$ peer chaincode install -n mycc -v 1.0 -p github.com/chaincode/chaincode_example02/go
```

BYFN 실행

- Install Chaincode (Chaincode_example02)

```
## peer0.org2
$ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/users/Admin@org2.example.com/msp
$ CORE_PEER_ADDRESS=peer0.org2.example.com:7051
$ CORE_PEER_LOCALMSPID="Org2MSP"
$ CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/peers/peer0.org2.example.com/tls/ca.crt
$ peer chaincode install -n mycc -v 1.0 -p github.com/chaincode/chaincode_example02/go
```

```
## peer1.org2
$ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/users/Admin@org2.example.com/msp
$ CORE_PEER_ADDRESS=peer1.org2.example.com:7051
$ CORE_PEER_LOCALMSPID="Org2MSP"
$ CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/peers/peer1.org2.example.com/tls/ca.crt
$ peer chaincode install -n mycc -v 1.0 -p github.com/chaincode/chaincode_example02/go
```

BYFN 실행

- Instantiate Chaincode (Chaincode_example02)

```
$ peer chaincode instantiate -o orderer.example.com:7050 --tls $CORE_PEER_TSL_ENABLED --cafile
/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/example.com/orderers/or
derer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem -C $CHANNEL_NAME -n mycc -v 1.0 -c
'{"Args":["init", "a", "100", "b", "200"]}' -P "OR ('Org1MSP.peer', 'Org2MSP.peer')"
```

- Query Chaincode (Chaincode_example02)

```
$ peer chaincode query -C $CHANNEL_NAME -n mycc -c '{"Args":["query","a"]}'
```

BYFN 실행

- Invoke Chaincode (Chaincode_example02)

```
$ peer chaincode invoke -o orderer.example.com:7050 --tls true --cafile
/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/example.com/orderers/or
derer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem -C $CHANNEL_NAME -n mycc --
peerAddresses peer0.org1.example.com:7051 --tlsRootCertFiles
/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org1.example.com/peers/pee
r0.org1.example.com/tls/ca.crt --peerAddresses peer0.org2.example.com:7051 --tlsRootCertFiles
/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/org2.example.com/peers/pee
r0.org2.example.com/tls/ca.crt -c '{"Args":["invoke","a","b","10"]}'
```