

TEST CERTIFIED FABRIC DEVELOPER NETWORK (CFDN) ON AWS EC2 INSTANCE

Step 001: Launch an AWS EC2 Instance which has Hyperledger Fabric installed ([User Guide](#))

Connect To Your Instance

☒ I would like to connect with
☐ A standalone SSH client
☐ A Java SSH Client directly from my browser (Java required)

To access your instance:

1. Open an SSH client. (find out how to [connect using PuTTY](#))
2. Locate your private key file (██████████-key-pair-useast1.pem). The wizard automatically detects the key you used to launch the instance.
3. Your key must not be publicly viewable for SSH to work. Use this command if needed:

```
chmod 400 ██████████-key-pair-useast1.pem
```
4. Connect to your instance using its Public DNS:

```
ec2-52-91-201-169.compute-1.amazonaws.com
```

Example:

```
ssh -i "██████████-key-pair-useast1.pem" ubuntu@ec2-52-91-201-169.compute-1.amazonaws.com
```

Please note that in most cases the username above will be correct, however please ensure that you read your AMI usage instructions to ensure that the AMI owner has not changed the default AMI username.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

Close

Note that the AWS EC2 Instance has the Public DNS **ec2-52-91-201-169.compute-1.amazonaws.com**

Step 002: Connect to AWS EC2 Instance via PuTTY

```
ubuntu@ip-172-31-89-40: ~
login as: ubuntu
Authenticating with public key "imported-openssh-key"
Passphrase for key "imported-openssh-key":
Welcome to Ubuntu 16.04.4 LTS (GNU/Linux 4.4.0-1052-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

0 packages can be updated.
0 updates are security updates.

Last login: Sun Apr  1 05:43:07 2018 from 107.15.137.227
ubuntu@ip-172-31-89-40:~$
```

Step 003: Navigate to the **fabric-samples** folder

```
ubuntu@ip-172-31-89-40: ~$ cd Downloads/fabric-samples
```

Step 004: Clone **CFD** Repository from GitHub

```
ubuntu@ip-172-31-89-40: ~/Downloads/fabric-samples
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples$ git clone -b Craig-Henry-Lokesh-Vince https://github.com/theblockchainhub/CFD.git
```

This command will clone the **Craig-Henry-Lokesh-Vince** branch of the **CFD** Repository.

```
ubuntu@ip-172-31-89-40: ~/Downloads/fabric-samples
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples$ git clone -b Craig-Henry-Lokesh-Vince https://github.com/theblockchainhub/CFD.git
Cloning into 'CFD'...
remote: Counting objects: 262, done.
remote: Compressing objects: 100% (211/211), done.
remote: Total 262 (delta 64), reused 230 (delta 40), pack-reused 0
Receiving objects: 100% (262/262), 940.53 KiB | 0 bytes/s, done.
Resolving deltas: 100% (64/64), done.
Checking connectivity... done.
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples$ ls
balance-transfer  chaincode          fabric-ca          LICENSE            scripts
basic-network     chaincode-docker-devmode  first-network     MAINTAINERS.md
CFD               fabcar             high-throughput    README.md
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples$
```

Note that the branch was cloned into the **fabric-samples** directory as **CFD**

Step 005: Move the **cfid-network** from **CFD** directory to **fabric-samples** directory

Change Directory:

```
ubuntu@ip-172-31-89-40: ~/Downloads/fabric-samples
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples$ cd CFD
```

Display the working directory and the contents of the **CFD** directory:

```
ubuntu@ip-172-31-89-40: ~/Downloads/fabric-samples/CFD
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/CFD$ pwd
/home/ubuntu/Downloads/fabric-samples/CFD
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/CFD$ ls
cfid-network  hyperledger-fabric-installation-guide.pdf  README.md
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/CFD$
```

Return to the previous directory and move **cfid-network** from the **CFD** directory to the **fabric-samples** directory:

```
ubuntu@ip-172-31-89-40: ~/Downloads/fabric-samples
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/CFD$ cd ..
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples$ sudo mv /home/ubuntu/Downloads/fabric-samples/CFD/cfid-network /home/ubuntu/Downloads/fabric-samples
```

The above command should move the folder **cfid-network** from **CFD** to the **fabric-samples** directory

Display the contents of the **fabric-samples** directory:

```
ubuntu@ip-172-31-89-40: ~/Downloads/fabric-samples
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples$ ls
balance-transfer  cfid-network  fabcar  high-throughput  README.md
basic-network     chaincode     fabric-ca  LICENSE          scripts
CFD               chaincode-docker-devmode  first-network  MAINTAINERS.md
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples$
```

Note that the **cfid-network** folder is now at the same level as the **first-network** folder

Change Directory to **cfid-network**:

```
ubuntu@ip-172-31-89-40: ~/Downloads/fabric-samples/cfid-network
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/cfid-network$ cd cfid-network
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/cfid-network$
```

Set **PATH** value:

```
ubuntu@ip-172-31-89-40: ~/Downloads/fabric-samples/cfid-network
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/cfid-network$ export PATH~/Downloads/bin:$PATH
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/cfid-network$
```

At this point, the **CFDN** Network can be generated and started

Step 006: Generate CFDN

```
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/cfd-network$ ./cfdn.sh -m generate
Generating certs and genesis block for with channel 'mychannel' and CLI timeout of '10' seconds
and CLI delay of '3' seconds
Continue? [Y/n] y
proceeding ...
/home/ubuntu/Downloads/bin/cryptogen

#####
#### Generate certificates using cryptogen tool #####
#####
+ cryptogen generate --config=./crypto-config.yaml
comp1.example.com
comp2.example.com
+ res=0
+ set +x

/home/ubuntu/Downloads/bin/configtxgen
#####
##### Generating Orderer Genesis block #####
#####
+ configtxgen -profile TwoOrgsOrdererGenesis -outputBlock ./channel-artifacts/genesis.block
2018-04-04 02:25:51.611 UTC [common/tools/configtxgen] main -> INFO 001 Loading configuration
2018-04-04 02:25:51.620 UTC [msp] getMspConfig -> INFO 002 Loading NodeOUs
2018-04-04 02:25:51.621 UTC [msp] getMspConfig -> INFO 003 Loading NodeOUs
2018-04-04 02:25:51.621 UTC [common/tools/configtxgen] doOutputBlock -> INFO 004 Generating
genesis block
2018-04-04 02:25:51.621 UTC [common/tools/configtxgen] doOutputBlock -> INFO 005 Writing genesis
block
+ res=0
+ set +x

#####
### Generating channel configuration transaction 'channel.tx' ###
#####
+ configtxgen -profile TwoOrgsChannel -outputCreateChannelTx ./channel-artifacts/channel.tx -
channelID mychannel
2018-04-04 02:25:51.629 UTC [common/tools/configtxgen] main -> INFO 001 Loading configuration
2018-04-04 02:25:51.639 UTC [common/tools/configtxgen] doOutputChannelCreateTx -> INFO 002
Generating new channel configtx
2018-04-04 02:25:51.639 UTC [msp] getMspConfig -> INFO 003 Loading NodeOUs
2018-04-04 02:25:51.639 UTC [msp] getMspConfig -> INFO 004 Loading NodeOUs
2018-04-04 02:25:51.662 UTC [common/tools/configtxgen] doOutputChannelCreateTx -> INFO 005
Writing new channel tx
+ res=0
+ set +x

#####
##### Generating anchor peer update for Comp1MSP #####
#####
+ configtxgen -profile TwoOrgsChannel -outputAnchorPeersUpdate ./channel-
artifacts/Comp1MSPanchors.tx -channelID mychannel -asOrg Comp1MSP
2018-04-04 02:25:51.671 UTC [common/tools/configtxgen] main -> INFO 001 Loading configuration
2018-04-04 02:25:51.679 UTC [common/tools/configtxgen] doOutputAnchorPeersUpdate -> INFO 002
Generating anchor peer update
2018-04-04 02:25:51.680 UTC [common/tools/configtxgen] doOutputAnchorPeersUpdate -> INFO 003
Writing anchor peer update
+ res=0
+ set +x

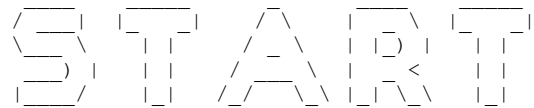
#####
##### Generating anchor peer update for Comp2MSP #####
#####
+ configtxgen -profile TwoOrgsChannel -outputAnchorPeersUpdate ./channel-
artifacts/Comp2MSPanchors.tx -channelID mychannel -asOrg Comp2MSP
2018-04-04 02:25:51.687 UTC [common/tools/configtxgen] main -> INFO 001 Loading configuration
2018-04-04 02:25:51.696 UTC [common/tools/configtxgen] doOutputAnchorPeersUpdate -> INFO 002
Generating anchor peer update
```

```
2018-04-04 02:25:51.696 UTC [common/tools/configtxgen] doOutputAnchorPeersUpdate -> INFO 003
Writing anchor peer update
+ res=0
+ set +x
```

```
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/cfd-network$
```

Step 007: Start CFDN

```
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/cfd-network$ ./cfdn.sh -m up
Starting with channel 'mychannel' and CLI timeout of '10' seconds and CLI delay of '3' seconds
Continue? [Y/n] y
proceeding ...
2018-04-04 02:34:05.692 UTC [main] main -> INFO 001 Exiting.....
LOCAL_VERSION=1.1.0
DOCKER_IMAGE_VERSION=1.1.0
Creating network "net_cfdn" with the default driver
Creating volume "net_orderer.example.com" with default driver
Creating volume "net_peer0.compl.example.com" with default driver
Creating volume "net_peer1.compl.example.com" with default driver
Creating volume "net_peer0.comp2.example.com" with default driver
Creating volume "net_peer1.comp2.example.com" with default driver
Creating peer1.compl.example.com ... done
Creating peer1.comp2.example.com ... done
Creating peer0.compl.example.com ... done
Creating orderer.example.com ... done
Creating peer0.comp2.example.com ... done
Creating cli ... done
```



Certified Fabric Developer Network (CFDN)

```
Channel name : mychannel
Creating channel...
CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp1MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/users/Admin@compl.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer0.compl.example.com:7051
+ peer channel create -o orderer.example.com:7050 -c mychannel -f ./channel-artifacts/channel.tx -
-tls true --cafile
/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem
+ res=0
+ set +x
2018-04-04 02:34:12.508 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections
initialized
2018-04-04 02:34:12.625 UTC [main] main -> INFO 002 Exiting.....
===== Channel "mychannel" is created successfully =====
```

```
Having all peers join the channel...
CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp1MSP
```

```

CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/users/Admin@compl.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer0.compl.example.com:7051
+ peer channel join -b mychannel.block
+ res=0
+ set +x
2018-04-04 02:34:12.677 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2018-04-04 02:34:12.724 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
2018-04-04 02:34:12.724 UTC [main] main -> INFO 003 Exiting.....
===== peer0.compl joined on the channel "mychannel" =====

CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp1MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/users/Admin@compl.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer1.compl.example.com:7051
+ peer channel join -b mychannel.block
+ res=0
+ set +x
2018-04-04 02:34:15.778 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2018-04-04 02:34:15.921 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
2018-04-04 02:34:15.921 UTC [main] main -> INFO 003 Exiting.....
===== peer1.compl joined on the channel "mychannel" =====

CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp2MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/users/Admin@comp2.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer0.comp2.example.com:7051
+ peer channel join -b mychannel.block
+ res=0
+ set +x
2018-04-04 02:34:18.975 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2018-04-04 02:34:19.022 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
2018-04-04 02:34:19.022 UTC [main] main -> INFO 003 Exiting.....
===== peer0.comp2 joined on the channel "mychannel" =====

CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer2.comp2.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer2.comp2.example.com/tls/server.key

```

```

CORE_PEER_LOCALMSPID=Comp2MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/users/Admin@compl.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer1.compl.example.com:7051
+ peer channel join -b mychannel.block
+ res=0
+ set +x
2018-04-04 02:34:22.075 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2018-04-04 02:34:22.134 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
2018-04-04 02:34:22.134 UTC [main] main -> INFO 003 Exiting.....
===== peer1.compl2 joined on the channel "mychannel" =====

Updating anchor peers for compl...
CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp1MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/users/Admin@compl.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer0.compl.example.com:7051
+ peer channel update -o orderer.example.com:7050 -c mychannel -f ./channel-artifacts/Comp1MSPanchors.tx --tls true --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem
+ res=0
+ set +x
2018-04-04 02:34:25.187 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2018-04-04 02:34:25.205 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
2018-04-04 02:34:25.205 UTC [main] main -> INFO 003 Exiting.....
===== Anchor peers for org "Comp1MSP" on "mychannel" is updated successfully =====

Updating anchor peers for comp2...
CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl2.example.com/peers/peer0.compl2.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl2.example.com/peers/peer0.compl2.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp2MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl2.example.com/peers/peer0.compl2.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl2.example.com/users/Admin@compl2.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer0.compl2.example.com:7051
+ peer channel update -o orderer.example.com:7050 -c mychannel -f ./channel-artifacts/Comp2MSPanchors.tx --tls true --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem
+ res=0
+ set +x
2018-04-04 02:34:28.261 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized

```

```

2018-04-04 02:34:28.275 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
2018-04-04 02:34:28.275 UTC [main] main -> INFO 003 Exiting.....
=====
Anchor peers for org "Comp2MSP" on "mychannel" is updated successfully
=====

```

```

Installing chaincode on peer0.compl...
CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp1MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.compl.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/users/Admin@compl.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer0.compl.example.com:7051
+ peer chaincode install -n mycc -v 1.0 -l golang -p github.com/chaincode/chaincode_example02/go/
+ res=0
+ set +x
2018-04-04 02:34:31.328 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2018-04-04 02:34:31.328 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2018-04-04 02:34:41.513 UTC [main] main -> INFO 003 Exiting.....
=====
Chaincode is installed on peer0.compl =====

```

```

Install chaincode on peer0.comp2...
CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp2MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/users/Admin@comp2.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer0.comp2.example.com:7051
+ peer chaincode install -n mycc -v 1.0 -l golang -p github.com/chaincode/chaincode_example02/go/
+ res=0
+ set +x
2018-04-04 02:34:41.564 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2018-04-04 02:34:41.564 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2018-04-04 02:34:41.697 UTC [main] main -> INFO 003 Exiting.....
=====
Chaincode is installed on peer0.comp2 =====

```

```

Instantiating chaincode on peer0.comp2...
CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp2MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/users/Admin@comp2.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer0.comp2.example.com:7051
+ peer chaincode instantiate -o orderer.example.com:7050 --tls true --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem -C mychannel -n mycc -l golang -v 1.0 -c '{"Args":["init","a","100","b","200"]}' -P 'OR('"'Comp1MSP.peer'",""'Comp2MSP.peer'")'

```



```

+ res=0
+ set +x
2018-04-04 02:34:41.752 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2018-04-04 02:34:41.752 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2018-04-04 02:35:30.847 UTC [main] main -> INFO 003 Exiting.....
===== Chaincode Instantiation on peer0.comp2 on channel 'mychannel' is successful
=====

Querying chaincode on peer0.comp1...
CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.comp1.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.comp1.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp1MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.comp1.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/users/Admin@compl.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer0.comp1.example.com:7051
===== Querying on peer0.comp1 on channel 'mychannel'... =====
Attempting to Query peer0.comp1 ...3 secs
+ peer chaincode query -C mychannel -n mycc -c '{"Args":["query","a"]}'
+ res=0
+ set +x

2018-04-04 02:35:34.028 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2018-04-04 02:35:34.028 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
Query Result: 100
2018-04-04 02:36:06.246 UTC [main] main -> INFO 003 Exiting.....
===== Query on peer0.comp1 on channel 'mychannel' is successful
=====

Sending invoke transaction on peer0.comp1...
CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.comp1.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.comp1.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp1MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock
CORE_PEER_TLS_CERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/peers/peer0.comp1.example.com/tls/server.crt
CORE_PEER_TLS_ENABLED=true
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/compl.example.com/users/Admin@compl.example.com/msp
CORE_PEER_ID=cli
CORE_LOGGING_LEVEL=INFO
CORE_PEER_ADDRESS=peer0.comp1.example.com:7051
+ peer chaincode invoke -o orderer.example.com:7050 --tls true --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem -C mychannel -n mycc -c '{"Args":["invoke","a","b","10"]}'
+ res=0
+ set +x
2018-04-04 02:36:06.398 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2018-04-04 02:36:06.399 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2018-04-04 02:36:06.413 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 003 Chaincode invoke successful. result: status:200
2018-04-04 02:36:06.413 UTC [main] main -> INFO 004 Exiting.....
===== Invoke transaction on peer0.comp1 on channel 'mychannel' is successful
=====

Installing chaincode on peer1.comp2...
CORE_PEER_TLS_ROOTCERT_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/ca.crt
CORE_PEER_TLS_KEY_FILE=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/comp2.example.com/peers/peer0.comp2.example.com/tls/server.key
CORE_PEER_LOCALMSPID=Comp2MSP
CORE_VM_ENDPOINT=unix:///host/var/run/docker.sock

```


Step 008: Bring Down CFDN

```
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/cfd-network$ ./cfdn.sh -m down
Stopping with channel 'mychannel' and CLI timeout of '10' seconds and CLI delay of '3' seconds
Continue? [Y/n] y
proceeding ...
Stopping cli ... done
Stopping peer0.comp2.example.com ... done
Stopping orderer.example.com ... done
Stopping peer0.comp1.example.com ... done
Stopping peer1.comp2.example.com ... done
Stopping peer1.comp1.example.com ... done
Removing cli ... done
Removing peer0.comp2.example.com ... done
Removing orderer.example.com ... done
Removing peer0.comp1.example.com ... done
Removing peer1.comp2.example.com ... done
Removing peer1.comp1.example.com ... done
Removing network net_cfdn
Removing volume net_orderer.example.com
Removing volume net_peer0.comp1.example.com
Removing volume net_peer1.comp1.example.com
Removing volume net_peer0.comp2.example.com
Removing volume net_peer1.comp2.example.com
Removing network net_cfdn
WARNING: Network net_cfdn not found.
Removing volume net_orderer.example.com
WARNING: Volume net_orderer.example.com not found.
Removing volume net_peer0.comp1.example.com
WARNING: Volume net_peer0.comp1.example.com not found.
Removing volume net_peer1.comp1.example.com
WARNING: Volume net_peer1.comp1.example.com not found.
Removing volume net_peer0.comp2.example.com
WARNING: Volume net_peer0.comp2.example.com not found.
Removing volume net_peer1.comp2.example.com
WARNING: Volume net_peer1.comp2.example.com not found.
2b22a360d4eb
5934f3c5eb8e
008cbde33576
Untagged: dev-peer1.comp2.example.com-mycc-1.0-
e365e5763f2712789c3ee27428ece9dc449a96ce306910c1f6345eac7c9b6cdb:latest
Deleted: sha256:7dc84d1fe775500dee310c984d31f09e82375b49824daec976a938e35ca4a34a
Deleted: sha256:84ab76282aab32eb6e33286a8b2cf498976f2d4c3e03b32a0ce6b2fd89137630
Deleted: sha256:2bf19c09718d8262fd1aa86458b17f75083536c0385de0593150dc4d3d47ab69
Deleted: sha256:ad76fab3f5239aff106d3cee9b938e064761a37dcb99b2c3d7ac1a3b087b2671
Untagged: dev-peer0.comp1.example.com-mycc-1.0-
f38e8b58cdf326a976f04bd2b58eaa86441404ee9beac4d99351abcd0c803d58:latest
Deleted: sha256:40c7bf2df2e8c93fc0194d781132727574aff9974f9f1d25aeccc13d1348817b
Deleted: sha256:3d49eb3b638ee21e5022f828ce4289ab708ed966db1dcbb58435914d72014958
Deleted: sha256:6b182405d1cdb34ce73c48024163b139254bdfbc4e2b33b48123ad0a3a68df4e
Deleted: sha256:1e89817d6d7d77d36166b1832690c7c748bf56d0ab1708186d2a5db4ef879b82
Untagged: dev-peer0.comp2.example.com-mycc-1.0-
30e236a595c13decbf0754f9c176849d67eec8f40686785882c4dda1a52c74bc:latest
Deleted: sha256:546e4795f193d284ed1d70aec5a12f67098c87400b7b1c5889bf21eeb3dd1aee
Deleted: sha256:05874048ba452fe7d3d95c490e63614d13f0c5ad51e91a702e51bd53ff03de5c
Deleted: sha256:1e196339e7d83237d729fae0c58504c1a2cd7b3e48739349b5ba0fdbde387eda
Deleted: sha256:463ef12d98d78c4e74bd4326d9876b54cb493661c6de429057894b4ed3322b3c
ubuntu@ip-172-31-89-40:~/Downloads/fabric-samples/cfd-network$
```