

All commands and Property-Registration Network Flow:

1. Generating certificates, channel artifacts, joining channel and start-up network.
 - ./fabricNetwork.sh up

```
dell-nish@dell-ubuntu:~/Documents/property-registration/network$ ./fabricNetwork.sh generate
Generating certs and genesis block for channel 'registrationchannel' with CLI timeout of '15' seconds and CLI delay of '5' seconds and chaincode version '1.1'
Continue? [Y/n] y
proceeding ...
/home/dell-nish/Documents/property-registration/network/bin/cryptogen

#####
#### Generate certificates using cryptogen tool ####
#####
+ cryptogen generate --config=./crypto-config.yaml
registrar.property-registration-network.com
users.property-registration-network.com
+ res=0
+ set +x

/home/dell-nish/Documents/property-registration/network/bin/configtxgen
#####
##### Generating Orderer Genesis block #####
#####
+ configtxgen -profile OrdererGenesis -channelID upgrad-sys-channel -outputBlock ./channel-artifacts/genesis.block
2021-10-15 21:44:02.820 AEDT [common.tools.configtxgen.main] main -> INFO 001 Loading configuration
2021-10-15 21:44:02.831 AEDT [common.tools.configtxgen.localconfig] completeInitialization -> INFO 002 orderer type: solo
2021-10-15 21:44:02.831 AEDT [common.tools.configtxgen.localconfig] Load -> INFO 003 Loaded configuration: /home/dell-nish/Documents/property-registration/network/configtx.yaml
2021-10-15 21:44:02.844 AEDT [common.tools.configtxgen.localconfig] completeInitialization -> INFO 004 orderer type: solo
2021-10-15 21:44:02.844 AEDT [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 005 Loaded configuration: /home/dell-nish/Documents/property-registration/network/configtx.yaml
2021-10-15 21:44:02.846 AEDT [common.tools.configtxgen] doOutputBlock -> INFO 006 Generating genesis block
2021-10-15 21:44:02.846 AEDT [common.tools.configtxgen] doOutputBlock -> INFO 007 Writing genesis block
+ res=0
+ set +x

#####
### Generating channel configuration transaction 'channel.tx' ###
```

```
2021-10-15 10:44:44.789 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
===== peer1.users.registration-network.com joined channel 'registrationchannel' =====

+ peer channel join -b registrationchannel.block
+ res=0
+ set +x
2021-10-15 10:44:49.857 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2021-10-15 10:44:49.939 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
Updating anchor peers for REGISTRAR...
+ peer channel update -o orderer.property-registration-network.com:7050 -c registrationchannel -f ./channel-artifacts/registrarMSPanchors.tx
+ res=0
+ set +x
2021-10-15 10:44:50.006 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2021-10-15 10:44:50.019 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
===== Anchor peers updated for org 'registrarMSP' on channel 'registrationchannel' =====

Updating anchor peers for USERS...
+ peer channel update -o orderer.property-registration-network.com:7050 -c registrationchannel -f ./channel-artifacts/usersMSPanchors.tx
+ res=0
+ set +x
2021-10-15 10:44:55.095 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2021-10-15 10:44:55.112 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
===== Anchor peers updated for org 'usersMSP' on channel 'registrationchannel' =====

===== All GOOD, Hyperledger Fabric Property Registration Network Is Now Up and Running! =====

END

dell-nish@dell-ubuntu:~/Documents/property-registration/network$
```

2. Open another terminal and connect to Chaincode container.

- docker exec -it chaincode /bin/bash
- npm install
- npm run start-dev

```
dell-nish@dell-ubuntu:~/Documents/property-registration/network$ docker exec -it chaincode /bin/bash
root@202ee2bf6cb8:/opt/gopath/src/chaincode# npm install
npm WARN deprecated uuid@3.4.0: Please upgrade to version 7 or higher. Older versions may use Math.random() in certain circumstances, which is known to be problematic. See https://v8.dev/blog/math-random for details.
npm WARN deprecated mkdirp@0.5.1: Legacy versions of mkdirp are no longer supported. Please update to mkdirp 1.x. (Note that the API surface has changed to use Promises in 1.x.)
npm WARN deprecated grpc@1.24.3: This library will not receive further updates other than security fixes. We recommend using @grpc/grpc-js instead.
npm WARN deprecated circular-json@0.3.3: CircularJSON is in maintenance only, flattened is its successor.
npm WARN deprecated node-pre-gyp@0.15.0: Please upgrade to @mapbox/node-pre-gyp: the non-scoped node-pre-gyp package is deprecated and only the @mapbox scoped package will receive updates in the future

> @amprettia/x509@0.4.7 install /opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/@amprettia/x509
> node-gyp rebuild

make: Entering directory '/opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/@amprettia/x509/build'
CXX(target) Release/obj.target/x509/src/addon.o
CXX(target) Release/obj.target/x509/src/x509.o
../src/x509.cc: In function 'v8::Local<v8::Value> try_parse(const string&)':
../src/x509.cc:409:38: warning: value computed is not used [-Wunused-value]
    BIO_set_close(ext_bio, BIO_CLOSE);
                                ^
SOLINK_MODULE(target) Release/obj.target/x509.node
COPY Release/x509.node
make: Leaving directory '/opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/@amprettia/x509/build'

> grpc@1.24.3 install /opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/grpc
> node-pre-gyp install --fallback-to-build --library=static_library

node-pre-gyp WARN Using needle for node-pre-gyp https download
[grpc] Success: "/opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/grpc/src/node/extension_binary/node-v57-linux-x64-glibc/grpc_node.node" is installed via remote
npm notice created a lockfile as package-lock.json. You should commit this file.
```

```
added 467 packages from 1062 contributors and audited 467 packages in 26.866s
found 26 vulnerabilities (15 moderate, 10 high, 1 critical)
run 'npm audit fix' to fix them, or 'npm audit' for details
root@202ee2bf6cb8:/opt/gopath/src/chaincode# npm run start-dev

> regnet@0.0.1 start-dev /opt/gopath/src/chaincode
> fabric-chaincode-node start --peer.address peer0.users.property-registration-network.com:9053 --chaincode-id-name regnet:1.1

Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
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2021-10-15T10:46:28.766Z info [shim:contracts-spt/bootstrap.js] No metadata file supplied in contract, introspection will generate it
2021-10-15T10:46:28.767Z info [shim:contracts-spi/chaincodefromcontract.js] Using serializers {"transaction":"jsonSerializer","serialize":{} }
2021-10-15T10:46:28.814Z info [shim:lib/chaincode.js] Registering with peer peer0.users.property-registration-network.com:9053 as chaincode "regnet:1.1"

Command succeeded

2021-10-15T10:46:28.845Z info [shim:lib/handler.js] Successfully registered with peer node. State transferred to "established"
2021-10-15T10:46:28.846Z info [shim:lib/handler.js] Successfully established communication with peer node. State transferred to "ready"
```

3. Install and instantiate Chaincode

A. Chain code installation in peer0 of each organization in CLI container

- docker exec -it cli /bin/bash

For User

- CORE_PEER_LOCALMSPID="usersMSP"
- CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/users.property-registration-network.com/users/Admin@users.property-registration-network.com/msp
- CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:9051

- peer chaincode install -n regnet -v 1.1 -l node -p/opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/

```
dell-nish@dell-ubuntu:~/Documents/property-registration/network$ docker exec -it cli /bin/bash
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="usersMSP"
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/users.property-registration-network.com/users/Admin@users.property-registration-network.com/msp
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:9051
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n regnet -v 1.1 -l node -p/opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-10-15 10:48:26.637 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-10-15 10:48:26.638 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-10-15 10:48:26.747 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
```

For Registrar

- CORE_PEER_LOCALMSPID="registrarMSP"
- CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/registrar.property-registration-network.com/users/Admin@registrar.property-registration-network.com/msp
- CORE_PEER_ADDRESS=peer0.registrar.property-registration-network.com:7051
- peer chaincode install -n regnet -v 1.1 -l node -p/opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/

```
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="registrarMSP"
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/registrar.property-registration-network.com/users/Admin@registrar.property-registration-network.com/msp
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.registrar.property-registration-network.com:7051
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n regnet -v 1.1 -l node -p/opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-10-15 10:49:39.767 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-10-15 10:49:39.767 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-10-15 10:49:39.869 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

4. Chain Code Instantiation:

Open another terminal and connect to Cli container

- docker exec -it cli /bin/bash

Enter Environment variable:

- CORE_PEER_LOCALMSPID="usersMSP"
- CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/users.property-registration-network.com/users/Admin@users.property-registration-network.com/msp
- CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:9051

Instantiate Chaincode:

- peer chaincode instantiate -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -l node -v 1.1 -c '{"Args":["org.property-registration-network.regnet.users:instantiate","org.property-registration-network.regnet.registrar:instantiate"]}' -P "OR ('usersMSP.member','registrarMSP.member')"

```
dell-nish@dell-ubuntu:~/Documents/property-registration/network$ docker exec -it cli /bin/bash
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="usersMSP"
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/users.property-registration-network.com/users/Admin@users.property-registration-network.com/msp
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:9051
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode instantiate -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -l node -v 1.1 -c '{"Args":["org.property-registration-network.regnet.users:instantiate","org.property-registration-network.regnet.registrar:instantiate"]}' -P 'OR ('usersMSP.member','registrarMSP.member')'"
2021-10-15 10:58:55.917 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escv
2021-10-15 10:58:55.917 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
root@55575b863045:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

docker logs -f peer0.users.property-registration-network.com

```
dell-nish@dell-ubuntu:~/Documents/property-registration/network$ docker logs -f peer0.users.property-registration-network.com
2021-10-15 10:44:17.141 UTC [nodeCmd] serve -> INFO 001 Starting peer:
Version: 1.4.3
Commit SHA: b8c4a6a
Go version: go1.11.5
OS/Arch: linux/amd64
Chaincode:
Base Image Version: 0.4.15
Base Docker Namespace: hyperledger
Base Docker Label: org.hyperledger.fabric
Docker Namespace: hyperledger
2021-10-15 10:44:17.141 UTC [ledgermgmt] initialize -> INFO 002 Initializing ledger mgmt
2021-10-15 10:44:17.142 UTC [kvledger] NewProvider -> INFO 003 Initializing ledger provider
2021-10-15 10:44:17.215 UTC [kvledger] NewProvider -> INFO 004 ledger provider initialized
2021-10-15 10:44:17.284 UTC [ledgermgmt] initialize -> INFO 005 ledger mgmt initialized
2021-10-15 10:44:17.284 UTC [nodeCmd] serve -> INFO 006 Running in chaincode development mode
2021-10-15 10:44:17.284 UTC [nodeCmd] serve -> INFO 007 Disable loading validity system chaincode
2021-10-15 10:44:17.284 UTC [peer] func1 -> INFO 008 Auto-detected peer address: 172.21.0.3:9051
2021-10-15 10:44:17.284 UTC [peer] func1 -> INFO 009 Returning peer0.users.property-registration-network.com:9051
2021-10-15 10:44:17.285 UTC [peer] func1 -> INFO 00a Auto-detected peer address: 172.21.0.3:9051
2021-10-15 10:44:17.285 UTC [peer] func1 -> INFO 00b Returning peer0.users.property-registration-network.com:9051
2021-10-15 10:44:17.287 UTC [nodeCmd] computeChaincodeEndpoint -> INFO 00c Entering computeChaincodeEndpoint with peerHostname: peer0.users.pr
operty-registration-network.com
2021-10-15 10:44:17.287 UTC [nodeCmd] computeChaincodeEndpoint -> INFO 00d Exit with ccEndpoint: peer0.users.property-registration-network.com:9051
2021-10-15 10:44:17.288 UTC [sccapi] registerSysCC -> INFO 00e system chaincode lscc(github.com/hyperledger/fabric/core/scc/lscv) registered
2021-10-15 10:44:17.288 UTC [sccapi] registerSysCC -> INFO 00f system chaincode cscc(github.com/hyperledger/fabric/core/scc/cscc) registered
2021-10-15 10:44:17.288 UTC [sccapi] registerSysCC -> INFO 010 system chaincode qscc(github.com/hyperledger/fabric/core/scc/qscc) registered
2021-10-15 10:44:17.289 UTC [sccapi] registerSysCC -> INFO 011 system chaincode (+lifecycle,githu.com/hyperledger/fabric/core/chaincode/lifec
ycle,true) disabled
2021-10-15 10:44:17.292 UTC [gossip.service] func1 -> INFO 012 Initialize gossip with endpoint peer0.users.property-registration-network.com:9051 and bootstrap set [peer1.users.property-registration-network.com:10051]
2021-10-15 10:44:17.299 UTC [gossip.gossip] NewGossipService -> INFO 013 Creating gossip service with self membership of Endpoint: peer0.users
.property-registration-network.com:9051, InternalEndpoint: peer0.users.property-registration-network.com:9051, PKI-ID: 71a7ce403234a554235c56e5de2e3c760164c2470408bd3cf8cb6caa69ac104, Metadata:
2021-10-15 10:44:17.300 UTC [sccapi] deploySysCC -> INFO 014 system chaincode lscc(/github.com/hyperledger/fabric/core/scc/lscv) deployed
```

```
2021-10-15 10:44:55.164 UTC [comm.grpc.server] 1 -> INFO 055 unary call completed grpc.service=gossip.Gossip grpc.method=Ping grpc.request_dea
dline=2021-10-15T10:44:57.164Z grpc.peer_address=172.21.0.7:48946 grpc.code=OK grpc.call_duration=66.897µs
2021-10-15 10:44:55.173 UTC [comm.grpc.server] 1 -> INFO 056 unary call completed grpc.service=gossip.Gossip grpc.method=Ping grpc.request_dea
dline=2021-10-15T10:44:57.173Z grpc.peer_address=172.21.0.7:48950 grpc.code=OK grpc.call_duration=82.144µs
2021-10-15 10:44:55.173 UTC [comm.grpc.server] 1 -> INFO 057 streaming call completed grpc.service=gossip.Gossip grpc.method=GossipStream grpc
.request_deadline=2021-10-15T10:45:05.165Z grpc.peer_address=172.21.0.7:48946 error="rpc error: code = Canceled desc = context canceled" grpc.
code=Canceled grpc.call_duration=7.861084ms
2021-10-15 10:44:55.175 UTC [comm.grpc.server] 1 -> INFO 058 unary call completed grpc.service=gossip.Gossip grpc.method=Ping grpc.request_dea
dline=2021-10-15T10:44:57.175Z grpc.peer_address=172.21.0.4:41132 grpc.code=OK grpc.call_duration=69.124µs
2021-10-15 10:44:55.178 UTC [comm.grpc.server] 1 -> INFO 059 streaming call completed grpc.service=gossip.Gossip grpc.method=GossipStream grpc
.request_deadline=2021-10-15T10:45:05.166Z grpc.peer_address=172.21.0.4:41114 error="rpc error: code = Canceled desc = context canceled" grpc.
code=Canceled grpc.call_duration=11.76088ms
2021-10-15 10:44:55.213 UTC [kvledger] CommitWithPvtData -> INFO 05a [registrationchannel] Committed block [2] with 1 transaction(s) in 50ms (
state_validation=0ms block_and_pvtdata_commit=32ms state_commit=11ms) commitHash=[5f88b61407b149a48413433f4670c46531e5c4a8fbd339a9536ff8716a
559e]
2021-10-15 10:44:59.626 UTC [gossip.channel] reportMembershipChanges -> INFO 05b Membership view has changed. peers went online: [[peer1.regi
strar.property-registration-network.com:8051 ]], current view: [[peer2.users.property-registration-network.com:11051] [peer1.users.property-
registration-network.com:10051] [peer0.registrar.property-registration-network.com:7051 ] [peer1.registrar.property-registration-network.com:8051 ]]
2021-10-15 10:48:26.742 UTC [endorser] callChaincode -> INFO 05c [[b77b93de] Entry chaincode: name:"lscc"
2021-10-15 10:48:26.745 UTC [lscc] executeInstall -> INFO 05d Installed chaincode [regnet] Version [1.1] to peer
2021-10-15 10:48:26.745 UTC [endorser] callChaincode -> INFO 05e [[b77b93de] Exit chaincode: name:"lscc" (3ms)
2021-10-15 10:48:26.745 UTC [comm.grpc.server] 1 -> INFO 05f unary call completed grpc.service=protos.Endorser grpc.method=ProcessProposal grp
c.peer_address=172.21.0.5:43540 grpc.code=OK grpc.call_duration=3.440353ms
2021-10-15 10:58:55.919 UTC [endorser] callChaincode -> INFO 060 [registrationchannel][5901e6ae] Entry chaincode: name:"lscc"
2021-10-15 10:58:55.938 UTC [endorser] callChaincode -> INFO 061 [registrationchannel][5901e6ae] Exit chaincode: name:"lscc" (18ms)
2021-10-15 10:58:55.938 UTC [comm.grpc.server] 1 -> INFO 062 unary call completed grpc.service=protos.Endorser grpc.method=ProcessProposal grp
c.peer_address=172.21.0.5:43574 grpc.code=OK grpc.call_duration=19.706493ms
2021-10-15 10:58:57.961 UTC [gossip.privdata] StoreBlock -> INFO 063 [registrationchannel] Received block [3] from buffer
2021-10-15 10:58:57.965 UTC [committer.txvalidator] Validate -> INFO 064 [registrationchannel] Validated block [3] in 3ms
2021-10-15 10:58:57.965 UTC [cceventmgmt] HandleStateUpdates -> INFO 065 Channel [registrationchannel]: Handling deploy or update of chaincode
[regnet]
2021-10-15 10:58:58.010 UTC [kvledger] CommitWithPvtData -> INFO 066 [registrationchannel] Committed block [3] with 1 transaction(s) in 44ms (
state_validation=5ms block_and_pvtdata_commit=33ms state_commit=3ms) commitHash=[9db1cdf7d9ba382ec8d809ec7b3cf5ebc4f14b904a4f8b61c2aaa378ffb2f
308]
```


5. Invoke Chain code:

Invoke into peer0 of Users organization

`docker exec -it peer0.users.property-registration-network.com /bin/bash`

```
bell-nish@dell-ubuntu:~/Documents/property-registration/network$ docker exec -it peer0.users.property-registration-network.com /bin/bash
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

For User1: Seller:

requestNewUser:

- `peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:requestNewUser","nish01","np1@example.com","94678942678","adh001"]}'`

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050
-C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:requestNewUser","nish01","np1@example.com","94678
942678","adh001"]}'
2021-10-15 11:13:30.518 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"name
\\":\\"nish01\\",\\"email\\":\\"np1@example.com\\",\\"phoneNumber\\":\\"94678942678\\",\\"aadharId\\":\\"adh001\\",\\"userId\\":\\"x509::/C=US/ST=California/L=San
an Francisco/OU=peer/CN=peer0.users.property-registration-network.com::/C=US/ST=California/L=San Francisco/O=users.property-registration-netwo
rk.com/CN=ca.users.property-registration-network.com\\",\\"createdAt\\":\\"2021-10-15T11:13:30.511Z\\",\\"updatedAt\\":\\"2021-10-15T11:13:30.511Z\\"}
```

rechargeAccount:

- `peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:rechargeAccount","nish01","adh001","upg500"]}'`

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050
-C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:rechargeAccount","nish01","adh001","upg500"]}'
2021-10-15 11:40:11.396 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"name
\\":\\"nish01\\",\\"email\\":\\"np1@example.com\\",\\"phoneNumber\\":\\"94678942678\\",\\"aadharId\\":\\"adh001\\",\\"userId\\":\\"x509::/C=US/ST=California/L=San
an Francisco/OU=peer/CN=peer0.users.property-registration-network.com::/C=US/ST=California/L=San Francisco/O=users.property-registration-netwo
rk.com/CN=ca.users.property-registration-network.com\\",\\"createdAt\\":\\"2021-10-15T11:13:30.511Z\\",\\"updatedAt\\":\\"2021-10-15T11:40:11.392Z\\",\\"
upgradCoins\\":1000,\\"registrarId\\":\\"x509::/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com::/
C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\\",\\"status
\\":\\"Approved\\"}"
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

viewUser:

- `peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:viewUser","nish01","adh001"]}'`

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050
-C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:viewUser","nish01","adh001"]}'
2021-10-15 11:29:00.245 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"name
\\":\\"nish01\\",\\"email\\":\\"np1@example.com\\",\\"phoneNumber\\":\\"94678942678\\",\\"aadharId\\":\\"adh001\\",\\"userId\\":\\"x509::/C=US/ST=California/L=San
an Francisco/OU=peer/CN=peer0.users.property-registration-network.com::/C=US/ST=California/L=San Francisco/O=users.property-registration-netwo
rk.com/CN=ca.users.property-registration-network.com\\",\\"createdAt\\":\\"2021-10-15T11:13:30.511Z\\",\\"updatedAt\\":\\"2021-10-15T11:24:48.908Z\\",\\"
upgradCoins\\":500,\\"registrarId\\":\\"x509::/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com::/
C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\\",\\"status
\\":\\"Approved\\"}"
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

propertyRegistrationRequest:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:propertyRegistrationRequest","001","200","nish01","adh001"]}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:propertyRegistrationRequest","001","200","nish01","adh001"]}'
2021-10-15 11:30:04.484 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"propertyId":"001","owner":"nish01-adh001","price":"200","createdAt":"2021-10-15T11:30:04.477Z","updatedAt":"2021-10-15T11:30:04.477Z"}
```

updateProperty:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:updateProperty","001","nish001","adh001","onSale"]}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:updateProperty","001","nish001","adh001","onSale"]}'
2021-10-15 11:51:51.993 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"Property either doesn't exist or not approved on the network"
```

viewProperty:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:viewProperty","001"]}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:viewProperty","001"]}'
2021-10-15 11:31:07.568 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"propertyId":"001","owner":"nish01-adh001","price":"200","createdAt":"2021-10-15T11:30:04.477Z","updatedAt":"2021-10-15T11:30:04.477Z"}
```

2nd Property:

propertyRegistrationRequest:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:propertyRegistrationRequest","002","600","nish01","adh001"]}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:propertyRegistrationRequest","002","600","nish01","adh001"]}'
2021-10-15 11:32:28.947 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"propertyId":"002","owner":"nish01-adh001","price":"600","createdAt":"2021-10-15T11:32:28.943Z","updatedAt":"2021-10-15T11:32:28.943Z"}
```

updateProperty:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:updateProperty","002","nish001","adh001","onSale"]}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:updateProperty","002","nish001","adh001","onSale"]}'
2021-10-15 11:53:07.856 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"Property either doesn't exist or not approved on the network"
```

viewProperty:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:viewProperty"],"002"}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:viewProperty"],"002"}'
```

Image Viewer :43:27.739 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"propertId":"002","owner":"mish01-adh001","price":"600","createdAt":"2021-10-15T11:32:28.943Z","updatedAt":"2021-10-15T11:38:59.444Z","status":"registered","approvedBy":"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com"}

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

User 2: buyer:

requestNewUser:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:requestNewUser","mish02","mp2@example.com","942670942670","adh002"]}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:requestNewUser","mish02","mp2@example.com","942670942670","adh002"]}'
```

2021-10-15 11:19:53.543 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"name":"mish02","email":"mp2@example.com","phoneNumber":"942670942670","aadharId":"adh002","userId":"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.users.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=users.property-registration-network.com/CN=ca.users.property-registration-network.com","createdAt":"2021-10-15T11:19:53.537Z","updatedAt":"2021-10-15T11:19:53.537Z"}

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

rechargeAccount:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:rechargeAccount","mish02","adh002","upg500"]}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:rechargeAccount","mish02","adh002","upg500"]}'
```

2021-10-15 11:41:33.895 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"name":"mish02","email":"mp2@example.com","phoneNumber":"942670942670","aadharId":"adh002","userId":"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.users.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=users.property-registration-network.com/CN=ca.users.property-registration-network.com","createdAt":"2021-10-15T11:19:53.537Z","updatedAt":"2021-10-15T11:41:33.891Z","upgradCoins":1000,"registrarId":"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com","status":"Approved"}

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

purchaseProperty:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:purchaseProperty","001","mish02","adh002"]}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:purchaseProperty","001","mish02","adh002"]}'
```

2021-10-15 11:48:26.477 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"Property either doesn't exist or is not approved."

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Property 2:

purchaseProperty:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:purchaseProperty","002","mish02","adh002"]}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:purchaseProperty","002","mish02","adh002"]}'
```

2021-10-15 11:50:46.396 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"Property either doesn't exist or is not approved."

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

viewUser:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:viewUser","mish02","adh002"]}'

```
root@90c02e286369:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:viewUser","mish02","adh002"]}'
2021-10-15 11:46:54.802 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"name":"mish02","email":"mp2@example.com","phoneNumber":"942670942670","aadharId":"adh002","userId":"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.users.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=users.property-registration-network.com/CN=ca.users.property-registration-network.com","createdAt":"2021-10-15T11:19:53.537Z","updatedAt":"2021-10-15T11:41:33.891Z","upgradCoins":1000,"registrarId":"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com","status":"Approved"}
```

Invoke into peer0 of Registrar organization:

Open new terminal and execute below command:

docker exec -it peer0.registrar.property-registration-network.com /bin/bash

```
jell-nish@dell-ubuntu:~/Documents/property-registration/network$ docker exec -it peer0.registrar.property-registration-network.com /bin/bash
```

User1: Seller

approveNewUser:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:approveNewUser","nish01","adh001"]}'

```
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:approveNewUser","nish01","adh001"]}'
2021-10-15 11:21:16.841 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"name":"nish01","email":"np1@example.com","phoneNumber":"94678942678","aadharId":"adh001","userId":"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.users.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=users.property-registration-network.com/CN=ca.users.property-registration-network.com","createdAt":"2021-10-15T11:13:30.511Z","updatedAt":"2021-10-15T11:21:16.035Z","upgradCoins":0,"registrarId":"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com","status":"Approved"}
```

approvePropertyRegistration:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:approvePropertyRegistration","001"]}'

```
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:approvePropertyRegistration","001"]}'
2021-10-15 11:36:54.976 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"propertyId":"001","owner":"nish01-adh001","price":"200","createdAt":"2021-10-15T11:30:04.477Z","updatedAt":"2021-10-15T11:36:54.972Z","status":"registered","approvedBy":"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com"}
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

viewProperty:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:viewProperty","001"]}'

```
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:viewProperty","001"]}'
2021-10-15 11:55:33.394 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"propertyId":"001","owner":"nish01-adh001","price":"200","createdAt":"2021-10-15T11:30:04.477Z","updatedAt":"2021-10-15T11:55:04.819Z","status":"registered","approvedBy":"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com"}
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```


2nd Property:

approvePropertyRegistration:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:approvePropertyRegistration","002"]}'

```
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:approvePropertyRegistration","002"]}'
2021-10-15 11:38:59.450 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\"propertyId\":\"002\",\"owner\":\"nish01-adh001\",\"price\":\"600\",\"createdAt\":\"2021-10-15T11:32:28.943Z\",\"updatedAt\":\"2021-10-15T11:38:59.444Z\",\"status\":\"registered\",\"approvedBy\":\"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\"}"
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

viewProperty:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:viewProperty","002"]}'

```
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:viewProperty","002"]}'
2021-10-15 11:57:12.684 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\"propertyId\":\"002\",\"owner\":\"nish01-adh001\",\"price\":\"600\",\"createdAt\":\"2021-10-15T11:32:28.943Z\",\"updatedAt\":\"2021-10-15T11:38:59.444Z\",\"status\":\"registered\",\"approvedBy\":\"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\"}"
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

User 2: buyer

approveNewUser:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:approveNewUser","mish02","adh002"]}'

```
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:approveNewUser","mish02","adh002"]}'
2021-10-15 11:23:07.879 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\"name\":\"mish02\",\"email\":\"mp2@example.com\",\"phoneNumber\":\"942670942670\",\"aadharId\":\"adh002\",\"userId\":\"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.users.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=users.property-registration-network.com/CN=ca.users.property-registration-network.com\",\"createdAt\":\"2021-10-15T11:19:53.537Z\",\"updatedAt\":\"2021-10-15T11:23:07.875Z\",\"upgradCoins\":\"0\",\"registrarId\":\"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\",\"status\":\"Approved\"}"
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

viewProperty:

- peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:viewProperty","001"]}'

```
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:viewProperty","001"]}'
2021-10-15 11:58:25.826 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\"propertyId\":\"001\",\"owner\":\"nish01-adh001\",\"price\":\"200\",\"createdAt\":\"2021-10-15T11:30:04.477Z\",\"updatedAt\":\"2021-10-15T11:55:04.819Z\",\"status\":\"registered\",\"approvedBy\":\"x509:/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\"}"
root@7178f93940d4:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```