

Property Registration Application – Hyperledger Fabric

Start & Configuration Instructions

- Run the following commands to bootstrap the network

Command to generate the crypto-materials:

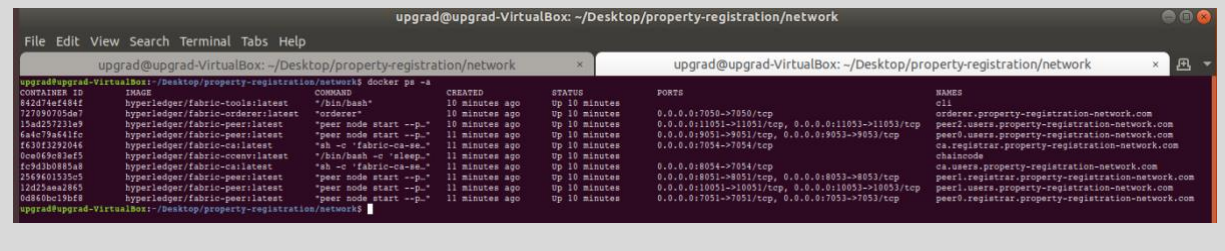
```
./fabricNetwork.sh generate
```

Command to start the network

```
./fabricNetwork.sh up
```

- Verify whether all the required containers are UP and running using following command

```
docker ps -a
```



CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
842d74ef484f	hyperledger/fabric-tools:latest	"/bin/bash"	10 minutes ago	Up 10 minutes		cli
727990705de7	hyperledger/fabric-orderer:latest	"orderer"	10 minutes ago	Up 10 minutes	0.0.0.0:7050->7050/tcp	orderer.property-registration-network.com
15ed257231e9	hyperledger/fabric-peer:latest	"peer node start --p..."	10 minutes ago	Up 10 minutes	0.0.0.0:11051->11051/tcp, 0.0.0.0:11053->11053/tcp	peer2.users.property-registration-network.com
6a4c79a541fc	hyperledger/fabric-peer:latest	"peer node start --p..."	10 minutes ago	Up 10 minutes	0.0.0.0:9051->9051/tcp, 0.0.0.0:9053->9053/tcp	peer0.users.property-registration-network.com
163d1292046	hyperledger/fabric-ca:latest	"sh -c 'fabric-ca-se..."	11 minutes ago	Up 10 minutes	0.0.0.0:7054->7054/tcp	ca.registrar.property-registration-network.com
0ce069c81ef5	hyperledger/fabric-couchdb:latest	"/bin/bash -c 'sleep..."	11 minutes ago	Up 10 minutes		chaincode
fc9d1b0885a8	hyperledger/fabric-ca:latest	"sh -c 'fabric-ca-se..."	11 minutes ago	Up 10 minutes	0.0.0.0:8054->7054/tcp	ca.users.property-registration-network.com
2569601535c5	hyperledger/fabric-peer:latest	"peer node start --p..."	11 minutes ago	Up 10 minutes	0.0.0.0:8051->8051/tcp, 0.0.0.0:8053->8053/tcp	peer1.registrar.property-registration-network.com
12d25aea2865	hyperledger/fabric-peer:latest	"peer node start --p..."	11 minutes ago	Up 10 minutes	0.0.0.0:10051->10051/tcp, 0.0.0.0:10053->10053/tcp	peer1.users.property-registration-network.com
0d860bc19bf8	hyperledger/fabric-peer:latest	"peer node start --p..."	11 minutes ago	Up 10 minutes	0.0.0.0:7051->7051/tcp, 0.0.0.0:7053->7053/tcp	peer0.registrar.property-registration-network.com

- Start the chaincode in DEV mode

SSH to chaincode container in new terminal/tab using the following command

```
docker exec -it chaincode /bin/bash
```

And then issue following command to start chaincode in DEV mode

```
npm run start-dev
```

```
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop/property-registration/network x root@0ce069c83ef5: /opt/gopath/src/chaincode
root@0ce069c83ef5: /opt/gopath/src/chaincode# docker exec -it chaincode /bin/bash
total 332
-rwxrwx--- 1 root 999 5037 Apr 30 23:48 RegistrarContract.js
-rwxrwx--- 1 root 999 13224 May 1 00:27 UserContract.js
-rwxrwx--- 1 root 999 287 Apr 30 00:26 index.js
drwxrwx--- 1 root 999 15328 Apr 29 23:51 node_modules
-rwxrwx--- 1 root 999 305704 Apr 29 23:51 package-lock.json
-rwxrwx--- 1 root 999 1184 Apr 29 23:51 package.json
root@0ce069c83ef5: /opt/gopath/src/chaincode# npm install
npm WARN webpack-dev-middleware@3.7.2 requires a peer of webpack@^4.0.0 but none is installed. You must install peer dependencies yourself.
npm WARN webpack-dev-server@3.10.3 requires a peer of webpack@^4.0.0 || ^5.0.0 but none is installed. You must install peer dependencies yourself.
npm WARN property-network@0.0.1 No repository field.
npm WARN property-network@0.0.1 No license field.

audited 5073 packages in 6.461s
found 0 vulnerabilities

root@0ce069c83ef5: /opt/gopath/src/chaincode# npm run start-dev
> property-network@0.0.1 start-dev /opt/gopath/src/chaincode
> fabric-chaincode-node start --peer.address peer0.registrar.property-registration-network.com:7053 --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.
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
2020-05-01T01:03:31.730Z info [shim:contracts-spi/bootstrap.js] No metadata file supplied in contract, introspection will generate all the data
2020-05-01T01:03:31.731Z info [shim:contracts-spi/chaincodefromcontract.js] Using serializers {"transaction":"jsonSerializer","serializers":{}}
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
2020-05-01T01:03:31.768Z info [shim:lib/chaincode.js] Registering with peer peer0.registrar.property-registration-network.com:7053 as chaincode "regnet:1.1"
Command succeeded

2020-05-01T01:03:31.802Z info [shim:lib/handler.js] Successfully registered with peer node. State transferred to "established"
2020-05-01T01:03:31.802Z info [shim:lib/handler.js] Successfully established communication with peer node. State transferred to "ready"
```

- Commands to Install & Instantiate the chaincode on to the network

./fabricNetwork.sh install

```
upgrad@upgrad-VirtualBox: ~/Desktop/property-registration/network
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop/property-registration/network x root@0ce069c83ef5: /opt/gopath/src/chaincode
+ res=0
+ set +x
2020-05-01 01:09:01.950 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2020-05-01 01:09:01.950 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2020-05-01 01:09:03.352 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
===== Chaincode is installed on peer1.registrar =====

Installing chaincode on peer0.users.property-registration-network.com ...
PEER : 0
ORG : users
+ peer chaincode install -n regnet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2020-05-01 01:09:03.449 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2020-05-01 01:09:03.449 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2020-05-01 01:09:05.240 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
===== Chaincode is installed on peer0.users =====

Instantiating chaincode on channel using peer0.registrar.property-registration-network.com ...
PEER : 0
ORG : registrar
+ 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:instantiate"]}' -P 'OR ('registrarMSP.member','usersMSP.member')'
+ res=0
+ 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.usercontract:instantiate"]}' -P 'OR ('registrarMSP.member','usersMSP.member')'
+ res=0
+ set +x
2020-05-01 01:09:05.515 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2020-05-01 01:09:05.515 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
===== Chaincode is instantiated on peer0.registrar on channel 'registrationchannel' =====

===== All GOOD, Chaincode REGNET Is Now Installed & Instantiated On Registration Network =====

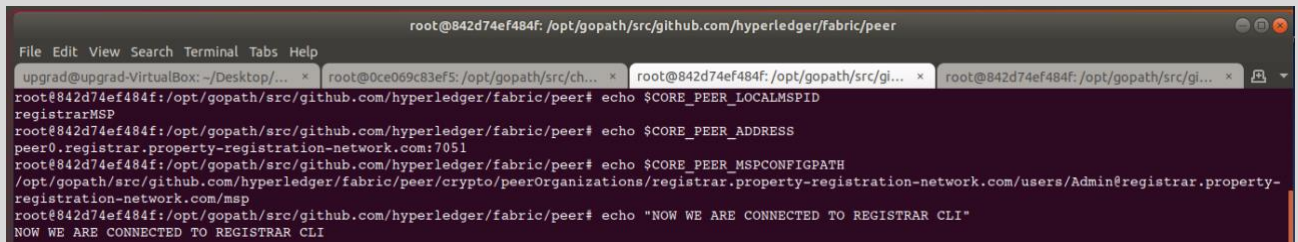
END
upgrad@upgrad-VirtualBox:~/Desktop/property-registration/network$
```

- Connect to cli node to verify various functions of chaincode

TAB 3: CLI – Connected to REGISTRARMSP: peer0.registrar.property-registration-network.com:7051

SSH to cli container in new terminal/tab using the following command

```
docker exec -it cli /bin/bash
```



```
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer
upgrad@upgrad-VirtualBox: ~/Desktop/... x root@0ce069c83ef5: /opt/gopath/src/ch... x root@842d74ef484f: /opt/gopath/src/gi... x root@842d74ef484f: /opt/gopath/src/gi... x
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
registrarMSP
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_ADDRESS
peer0.registrar.property-registration-network.com:7051
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_MSPCONFIGPATH
/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/registrar.property-registration-network.com/msp
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo "NOW WE ARE CONNECTED TO REGISTRAR CLI"
NOW WE ARE CONNECTED TO REGISTRAR CLI
```

TAB 4: CLI – Connected to USERMSP: peer0.users.property-registration-network.com:9051

SSH to cli container in new terminal/tab using the following command

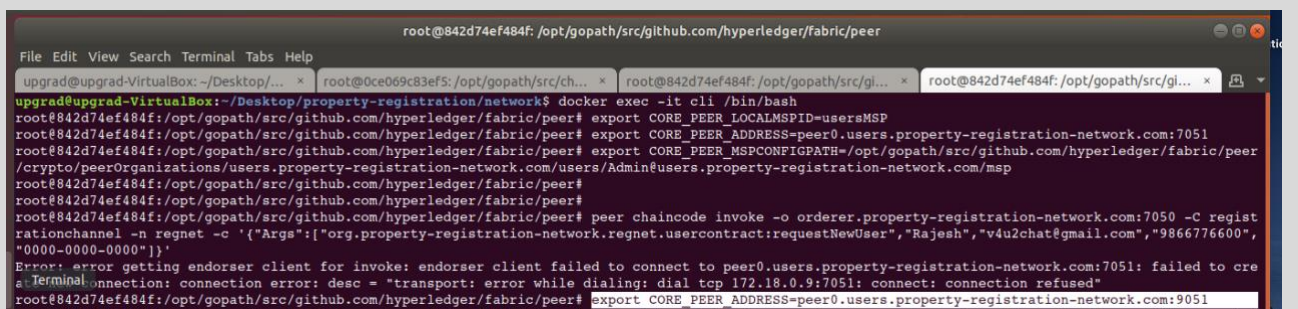
```
docker exec -it cli /bin/bash
```

Set ENV variables to connect to User's Node

```
export CORE_PEER_LOCALMSPID=usersMSP

export CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:9051

export 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@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer
upgrad@upgrad-VirtualBox: ~/Desktop/... x root@0ce069c83ef5: /opt/gopath/src/ch... x root@842d74ef484f: /opt/gopath/src/gi... x root@842d74ef484f: /opt/gopath/src/gi... x
upgrad@upgrad-VirtualBox: ~/Desktop/property-registration/network$ docker exec -it cli /bin/bash
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer# export CORE_PEER_LOCALMSPID=usersMSP
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer# export CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:9051
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer# export 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@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer#
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registra
tionchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:requestNewUser","Rajesh","v4u2chat@gmail.com","9866776600",
"0000-0000-0000"]}'
Error: error getting endorser client for invoke: endorser client failed to connect to peer0.users.property-registration-network.com:7051: failed to cre
a
a Terminal connection: connection error: desc = "transport: error while dialing: dial tcp 172.18.0.9:7051: connect: connection refused"
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer# export CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:9051
```

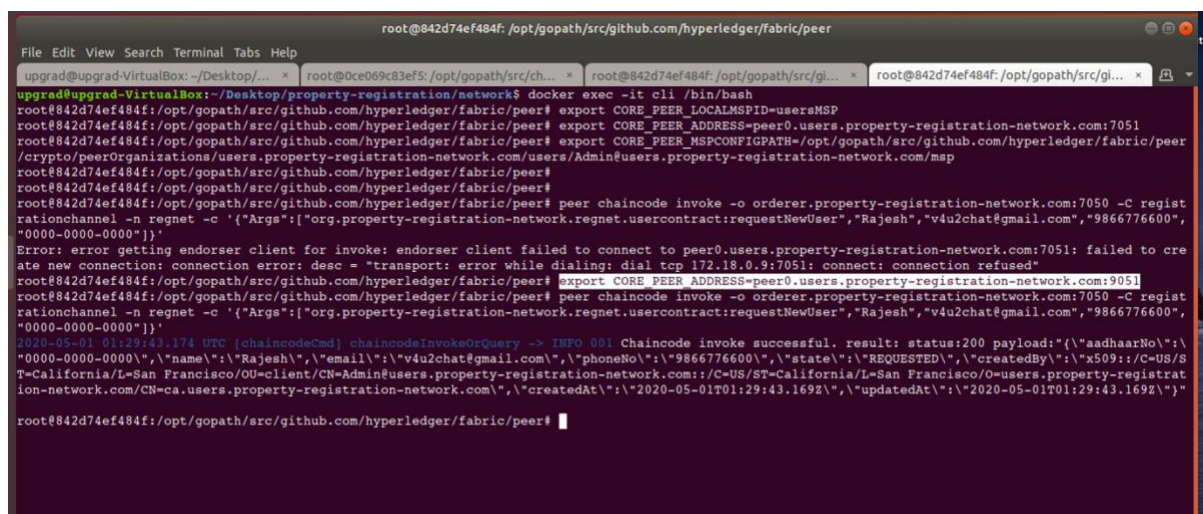
With the above – We are SET to verify our functionalities.

Transactions

requestNewUser

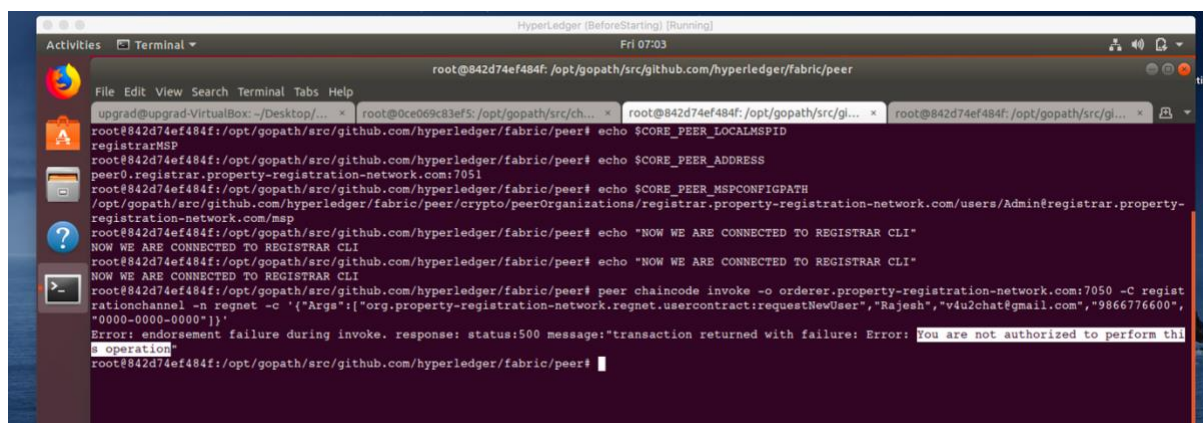
Execute the following command on **TAB 4: CLI – Connected to USERMSP**

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:requestNewUser","Rajesh","yadukrishna1918@gmail.com","9866776600-0000-0000"]}'
```



```
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop/... x root@0ce069c83ef5: /opt/gopath/src/ch... x root@842d74ef484f: /opt/gopath/src/gi... x root@842d74ef484f: /opt/gopath/src/gi... x
upgrad@upgrad-VirtualBox:~/Desktop/...$ docker exec -it cli /bin/bash
root@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer# export CORE_PEER_LOCALMSPID=usersMSP
root@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer# export CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:7051
root@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer# export 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@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer#
root@842d74ef484f:/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.usercontract:requestNewUser","Rajesh","yadukrishna1918@gmail.com","9866776600-0000-0000"]}'
Error: error getting endorser client for invoke: endorser client failed to connect to peer0.users.property-registration-network.com:7051: failed to create new connection: connection error: desc = "transport: error while dialing: dial tcp 172.18.0.9:7051: connect: connection refused"
root@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer# export CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:9051
root@842d74ef484f:/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.usercontract:requestNewUser","Rajesh","yadukrishna1918@gmail.com","9866776600-0000-0000"]}'
2020-05-01 01:29:43.174 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\n\"aadhaarNo\":\n\"0000-0000-0000\", \"name\": \"Rajesh\", \"email\": \"yadukrishna1918@gmail.com\", \"phoneNo\": \"9866776600\", \"state\": \"REQUESTED\", \"createdBy\": \"x509::C=US/ST=California/L=San Francisco/O=client/CN=Admin@users.property-registration-network.com\", \"createdBy\": \"x509::C=US/ST=California/L=San Francisco/O=users.property-registration-network.com/CN=ca.users.property-registration-network.com\", \"createdAt\": \"2020-05-01T01:29:43.169Z\", \"updatedAt\": \"2020-05-01T01:29:43.169Z\"}"
root@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario: If we execute the above command from **TAB 3: CLI – Connected to REGISTRARMSP**, we will get Unauthorized message as shown below

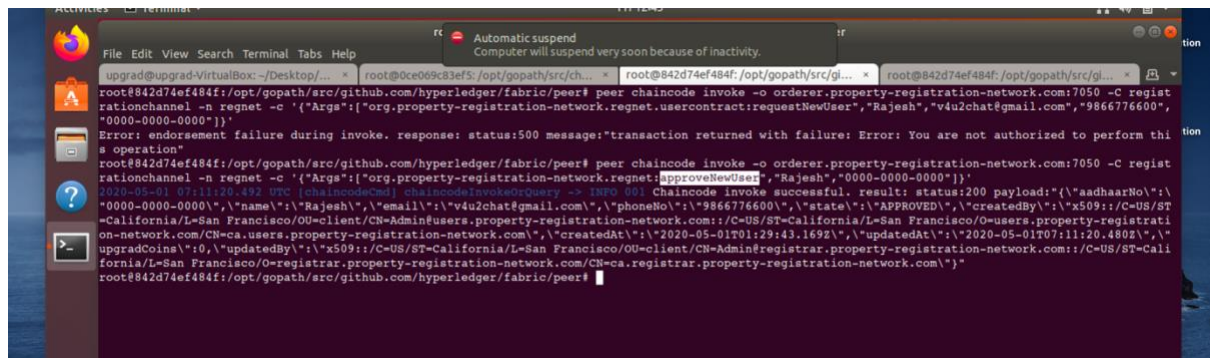


```
Hyperledger (BeforeStarting) [Running]
Fri 07:03
root@842d74ef484f: /opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox:~/Desktop/... x root@0ce069c83ef5: /opt/gopath/src/ch... x root@842d74ef484f: /opt/gopath/src/gi... x root@842d74ef484f: /opt/gopath/src/gi... x
root@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
registrarmSP
root@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_ADDRESS
peer0.registrar.property-registration-network.com:7051
root@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer# echo $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@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer# echo "NOW WE ARE CONNECTED TO REGISTRAR CLI"
NOW WE ARE CONNECTED TO REGISTRAR CLI
root@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer# echo "NOW WE ARE CONNECTED TO REGISTRAR CLI"
NOW WE ARE CONNECTED TO REGISTRAR CLI
root@842d74ef484f:/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.usercontract:requestNewUser","Rajesh","yadukrishna1918@gmail.com","9866776600-0000-0000"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: You are not authorized to perform this operation"
root@842d74ef484f:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

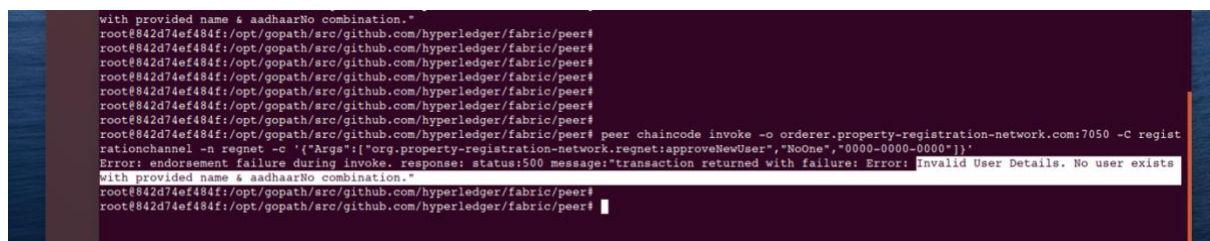
approveNewUser

TAB 3: CLI – Connected to REGISTRARMSP

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:approveNewUser","Rajesh","0000-0000-0000"]}'
```

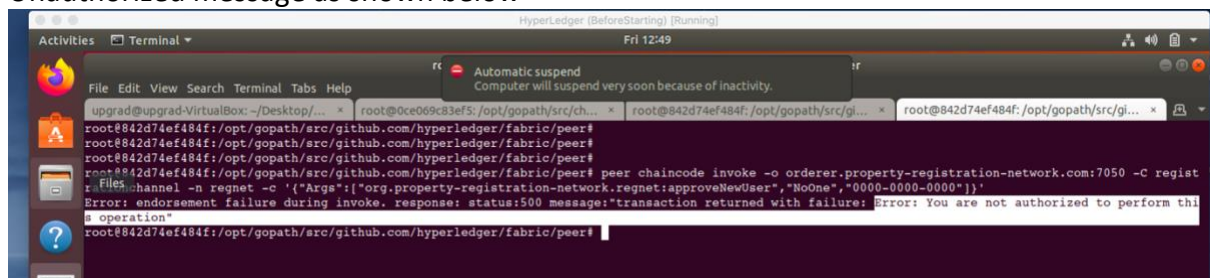


Validation Scenario#1: Invalid User Details



Validation Scenario#2: Invalid Initiator

If we execute the above command from TAB 4: CLI – Connected to USERMSP, we will get Unauthorized message as shown below



rechargeAccount

TAB 4: CLI – Connected to USERMSP

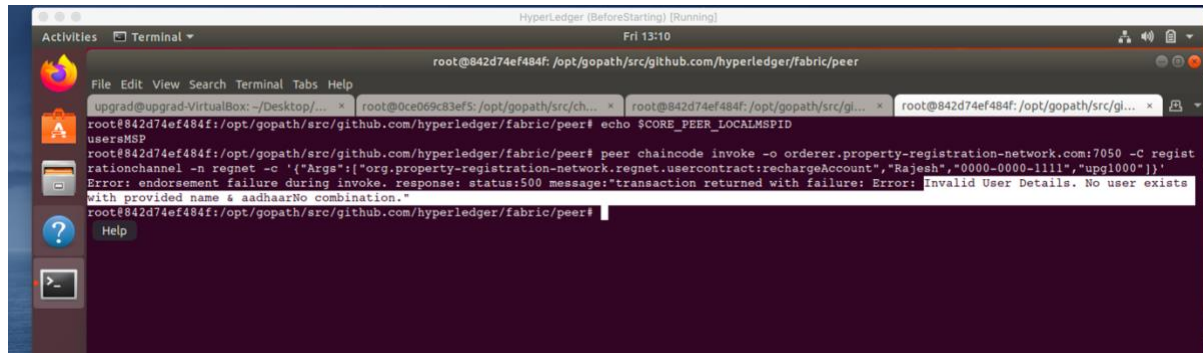
```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:rechargeUserAccount","Rajesh","0000-0000-0000","upg1000"]}'
```

```

root@6def8a063b6c:/opt/gopath/src/github.com/hyperledger/fabric/peer#
root@6def8a063b6c:/opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
usersMSP
root@6def8a063b6c:/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.usercontract:rechargeUserAccount","Rajesh","0000-0000-0000","upg1000"]}'
2020-05-01 23:02:47.490 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 00 Chaincode invoke successful. result: status:200 payload:{"aadhaarNo":"0000-0000-0000","name":"Rajesh","email":"v4u2chat@gmail.com","phoneNo":"9866776600","state":"APPROVED","createdBy":"x509:/C=US/ST=California/L=San Francisco/O=client/CN=Admin@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":"2020-05-01T23:01:43.448Z","updatedAt":"2020-05-01T23:01:49.084Z","upgradCoins":"1000","updatedBy":"x509:/C=US/ST=California/L=San Francisco/O=client/CN=Admin@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@6def8a063b6c:/opt/gopath/src/github.com/hyperledger/fabric/peer#

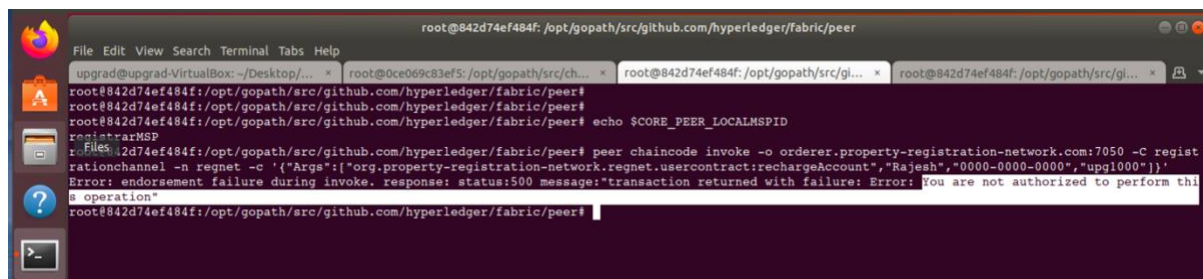
```

Validation Scenario#1: Invalid User Details



Validation Scenario#2: Invalid Initiator

If we execute the above command from **TAB 3: CLI – Connected to REGISTRARMSP**, we will get Unauthorized message as shown below



viewUser

TAB 4: CLI – Connected to USERMSP

```

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:viewUser","Rajesh","0000-0000-0000"]}'

```



```
Terminal
Sat 04:37
root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer

File Edit View Search Terminal Tabs Help

upgrad@upgrad-VirtualBox: ~/Desktop... x root@3f33742850e5: /opt/gopath/src/... x root@6def8a063b6c: /opt/gopath/src/... x root@6def8a063b6c: /opt/gopath/src/... x

root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
usersMSP
root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer#
root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer#
root@6def8a063b6c: /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:viewUser","Rajesh","0000-0000-0000"]}'
2020-05-01 23:06:05.402 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"aadhaar
No":"0000-0000-0000","name":"Rajesh","email":"v4u2chat@gmail.com","phoneNo":"9866776600","state":"APPROVED","createdBy":"x5
09:/C-US/ST-California/L-San Francisco/OU-client/CN-Admin@users.property-registration-network.com:/C-US/ST-California/L-San Francisco/O-users.p
roperty-registration-network.com/CN-ca.users.property-registration-network.com","createdAt":"2020-05-01T23:01:43.448Z","updatedAt":"2020-
05-01T23:01:49.084Z","upgradCoins":1000,"updatedBy":"x509:/C-US/ST-California/L-San Francisco/OU-client/CN-Admin@registrar.property-regist
ration-network.com:/C-US/ST-California/L-San Francisco/O-registrar.property-registration-network.com/CN-ca.registrar.property-registration-netwo
rk.com"}
root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

TAB 3: CLI – Connected to REGISTRARMSP

```
Terminal
Sat 04:44
root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer

File Edit View Search Terminal Tabs Help

upgrad@upgrad-VirtualBox: ~/Desktop... x root@3f33742850e5: /opt/gopath/src/... x root@6def8a063b6c: /opt/gopath/src/... x root@6def8a063b6c: /opt/gopath/src/... x

root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
registrarMSP
root@6def8a063b6c: /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:viewUser","Rajesh","0000-0000-0000"]}'
2020-05-01 23:12:49.854 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"aadhaar
No":"0000-0000-0000","name":"Rajesh","email":"v4u2chat@gmail.com","phoneNo":"9866776600","state":"APPROVED","createdBy":"x5
09:/C-US/ST-California/L-San Francisco/OU-client/CN-Admin@users.property-registration-network.com:/C-US/ST-California/L-San Francisco/O-users.p
roperty-registration-network.com/CN-ca.users.property-registration-network.com","createdAt":"2020-05-01T23:01:43.448Z","updatedAt":"2020-
05-01T23:01:49.084Z","upgradCoins":1000,"updatedBy":"x509:/C-US/ST-California/L-San Francisco/OU-client/CN-Admin@registrar.property-regist
ration-network.com:/C-US/ST-California/L-San Francisco/O-registrar.property-registration-network.com/CN-ca.registrar.property-registration-netwo
rk.com"}
root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario#1: Invalid User Details

```
Terminal
Sat 04:46
root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer

File Edit View Search Terminal Tabs Help

upgrad@upgrad-VirtualBox: ~/Desktop... x root@3f33742850e5: /opt/gopath/src/... x root@6def8a063b6c: /opt/gopath/src/... x root@6def8a063b6c: /opt/gopath/src/... x

root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
registrarMSP
root@6def8a063b6c: /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:viewUser","Rajesh","0000-0000-0000"]}'
2020-05-01 23:12:49.854 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"aadhaar
No":"0000-0000-0000","name":"Rajesh","email":"v4u2chat@gmail.com","phoneNo":"9866776600","state":"APPROVED","createdBy":"x5
09:/C-US/ST-California/L-San Francisco/OU-client/CN-Admin@users.property-registration-network.com:/C-US/ST-California/L-San Francisco/O-users.p
roperty-registration-network.com/CN-ca.users.property-registration-network.com","createdAt":"2020-05-01T23:01:43.448Z","updatedAt":"2020-
05-01T23:01:49.084Z","upgradCoins":1000,"updatedBy":"x509:/C-US/ST-California/L-San Francisco/OU-client/CN-Admin@registrar.property-regist
ration-network.com:/C-US/ST-California/L-San Francisco/O-registrar.property-registration-network.com/CN-ca.registrar.property-registration-netwo
rk.com"}
root@6def8a063b6c: /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:viewUser","Rajesh","0000-0000-0001"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Invalid User Details. No user e
xists with provided name & aadhaarNo combination."
root@6def8a063b6c: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

propertyRegistrationRequest

TAB 4: CLI – Connected to USERMSP

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C
registrationchannel -n regnet -c '{"Args":["org.property-registration-
network.regnet.usercontract:propertyRegistrationRequest","1","500","REQUSET","Rajes
h","0000-0000-0000"]}'
```

```
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... * root@ee485233bb4f: /opt/gopath/src... * root@7fb8e26ec5e2: /opt/gopath/src/... * root@7fb8e26ec5e2: /opt/gopath/src/... *
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
usersMSP
root@7fb8e26ec5e2: /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.usercontract:propertyRegistrationRequest","1","500","REQUEST
","Rajesh","0000-0000-0000"]}'
2020-05-01 23:49:45.014 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\\"property
id\\":\\"1\\",\\"price\\":500,\\"owner\\":\\"\\u0000org.property-registration-network.regnet.user\\u0000Rajesh\\u00000000-0000-0000\\u0000\\",\\"createdBy
\\":\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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\\":\\"2020-05-01T23:49:45.007Z\\",\\"updatedBy\\":
\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#users.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=use
rs.property-registration-network.com/CN=ca.users.property-registration-network.com\\",\\"updatedAt\\":\\"2020-05-01T23:49:45.007Z\\"}"
Terminal 3e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario#1: Invalid User Details

```
Sat 05:22
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... * root@ee485233bb4f: /opt/gopath/src... * root@7fb8e26ec5e2: /opt/gopath/src/... * root@7fb8e26ec5e2: /opt/gopath/src/... *
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
usersMSP
root@7fb8e26ec5e2: /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.usercontract:propertyRegistrationRequest","1","500","REQUEST
","Rajesh","0000-0000-0000"]}'
2020-05-01 23:49:45.014 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\\"property
id\\":\\"1\\",\\"price\\":500,\\"owner\\":\\"\\u0000org.property-registration-network.regnet.user\\u0000Rajesh\\u00000000-0000-0000\\u0000\\",\\"createdBy
\\":\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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\\":\\"2020-05-01T23:49:45.007Z\\",\\"updatedBy\\":
\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#users.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=use
rs.property-registration-network.com/CN=ca.users.property-registration-network.com\\",\\"updatedAt\\":\\"2020-05-01T23:49:45.007Z\\"}"
root@7fb8e26ec5e2: /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.usercontract:propertyRegistrationRequest","1","500","REQUEST
","Rajesh","0000-0000-0001"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Invalid User Details. No user e
xists with provided name & aadhaarNo combination."
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario#2: Invalid Initiator

```
Sat 05:24
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... * root@ee485233bb4f: /opt/gopath/src... * root@7fb8e26ec5e2: /opt/gopath/src/... * root@7fb8e26ec5e2: /opt/gopath/src/... *
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
registrarmSP
root@7fb8e26ec5e2: /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.usercontract:propertyRegistrationRequest","1","500","REQUEST
","Rajesh","0000-0000-0001"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: You are not authorized to perfo
rm this operation"
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

approvePropertyRegistration

TAB 3: CLI – Connected to REGISTRARMSP

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C
registrationchannel -n regnet -c '{"Args":["org.property-registration-
network.regnet:approvePropertyRegistration","1"]}'
```



```
Terminal
Sat 05:29
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer

File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... x root@ee485233bb4f: /opt/gopath/src... x root@7fb8e26ec5e2: /opt/gopath/src/... x root@7fb8e26ec5e2: /opt/gopath/src/... x
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
registrarmsp
root@7fb8e26ec5e2: /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:approvePropertyRegistration","1"]}'
2020-05-01 23:59:19.730 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\\\"property
id\\\":\\\"1\\\",\\\"price\\\":500,\\\"owner\\\":\\\"\\u0000org.property-registration-network.regnet.user\\u0000Rajesh\\u00000000-0000-0000\\u0000\\\",\\\"createdBy
\\\":\\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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\\\":\\\"2020-05-01T23:49:45.007Z\\\",\\\"updatedAt\\\":
\\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#registrarmsp.property-registration-network.com:/C=US/ST=California/L=San Francisco/O
=registrarmsp.property-registration-network.com/CN=ca.registrarmsp.property-registration-network.com\\\",\\\"updatedAt\\\":\\\"2020-05-01T23:59:19.720Z\\\",\\\"sta
tus\\\":\\\"REGISTERED\\\"}"
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario#1: Invalid Property ID

```
root@7fb8e26ec5e2: /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:approvePropertyRegistration","100"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Invalid Property Details. We al
ready have a property registered with us for the given Property ID"
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario#2: Invalid Initiator

```
Terminal
Sat 05:35
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer

File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... x root@ee485233bb4f: /opt/gopath/src... x root@7fb8e26ec5e2: /opt/gopath/src/... x root@7fb8e26ec5e2: /opt/gopath/src/... x
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
usersmsp
root@7fb8e26ec5e2: /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:approvePropertyRegistration","100"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: You are not authorized to perform this operation"
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

viewProperty

TAB 3: CLI – Connected to REGISTRARMSP

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:viewProperty","1"]}'

```
Terminal
Sat 05:36
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer

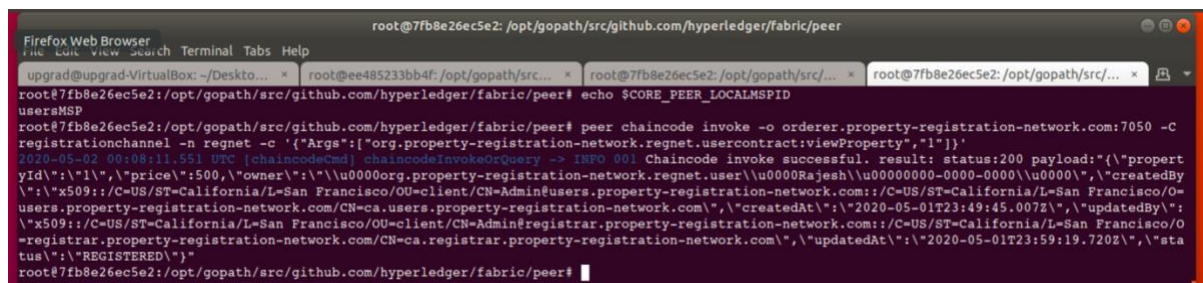
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... x root@ee485233bb4f: /opt/gopath/src... x root@7fb8e26ec5e2: /opt/gopath/src/... x root@7fb8e26ec5e2: /opt/gopath/src/... x
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
registrarmsp
root@7fb8e26ec5e2: /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:viewProperty","1"]}'
2020-05-02 00:05:56.305 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\\\"property
id\\\":\\\"1\\\",\\\"price\\\":500,\\\"owner\\\":\\\"\\u0000org.property-registration-network.regnet.user\\u0000Rajesh\\u00000000-0000-0000\\u0000\\\",\\\"createdBy
\\\":\\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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\\\":\\\"2020-05-01T23:49:45.007Z\\\",\\\"updatedAt\\\":
\\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#registrarmsp.property-registration-network.com:/C=US/ST=California/L=San Francisco/O
=registrarmsp.property-registration-network.com/CN=ca.registrarmsp.property-registration-network.com\\\",\\\"updatedAt\\\":\\\"2020-05-01T23:59:19.720Z\\\",\\\"sta
tus\\\":\\\"REGISTERED\\\"}"
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario#1: Invalid Property ID

```
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
registrarmsp
root@7fb8e26ec5e2: /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:viewProperty","10"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Invalid Property Details. We al
ready have a property registered with us for the given Property ID"
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

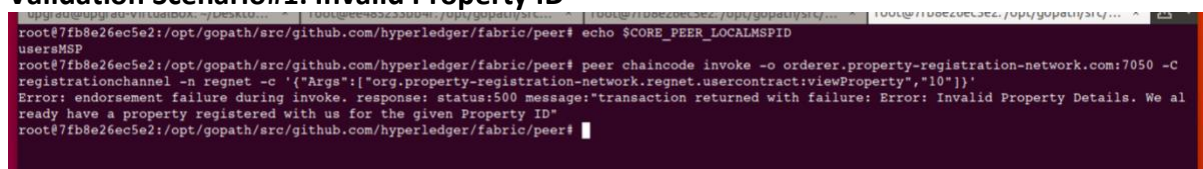
TAB 4: CLI – Connected to USERMSP

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C
registrationchannel -n regnet -c '{"Args":["org.property-registration-
network.regnet.usercontract:viewProperty","1"]}'
```



The screenshot shows a terminal window with the command `peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:viewProperty","1"]}'` executed successfully. The output indicates a successful transaction with a status of 200 and a payload containing property details for Property ID 1.

Validation Scenario#1: Invalid Property ID

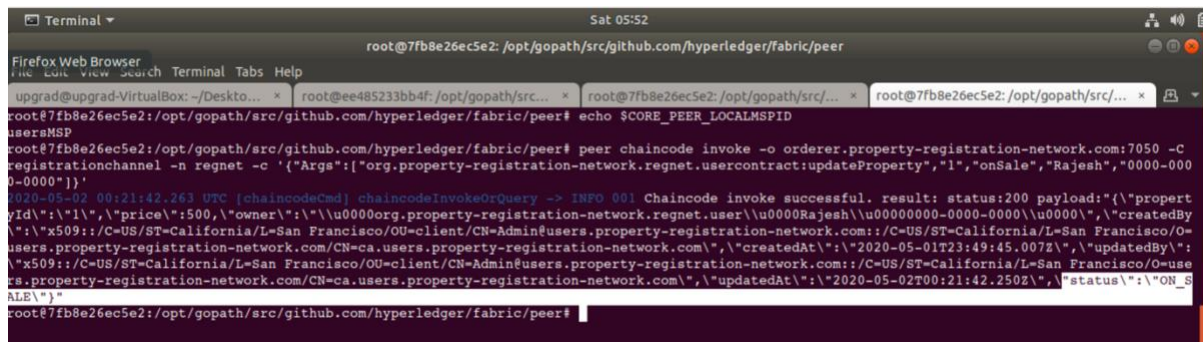


The screenshot shows the same command as before, but with the property ID changed to "10". The output shows an error: "Error: endorsement failure during invoke. response: status:500 message: transaction returned with failure: Error: Invalid Property Details. We already have a property registered with us for the given Property ID".

updateProperty

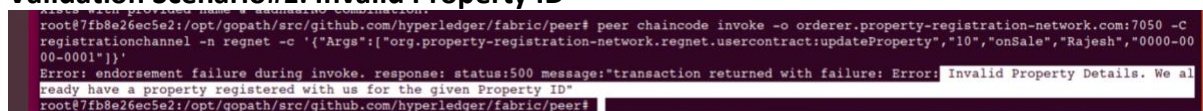
TAB 4: CLI – Connected to USERMSP

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C
registrationchannel -n regnet -c '{"Args":["org.property-registration-
network.regnet.usercontract:updateProperty","1","onSale","Rajesh","0000-0000-
0000"]}'
```



The screenshot shows a terminal window with the command `peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:updateProperty","1","onSale","Rajesh","0000-0000-0000"]}'` executed successfully. The output indicates a successful transaction with a status of 200 and a payload containing the updated property details.

Validation Scenario#1: Invalid Property ID



The screenshot shows the same command as before, but with the property ID changed to "10". The output shows an error: "Error: endorsement failure during invoke. response: status:500 message: transaction returned with failure: Error: Invalid Property Details. We already have a property registered with us for the given Property ID".

Validation Scenario#2: Invalid Property Status



The screenshot shows the same command as before, but with the status changed to "TEST". The output shows an error: "Error: endorsement failure during invoke. response: status:500 message: transaction returned with failure: Error: Invalid Property Status : TEST".

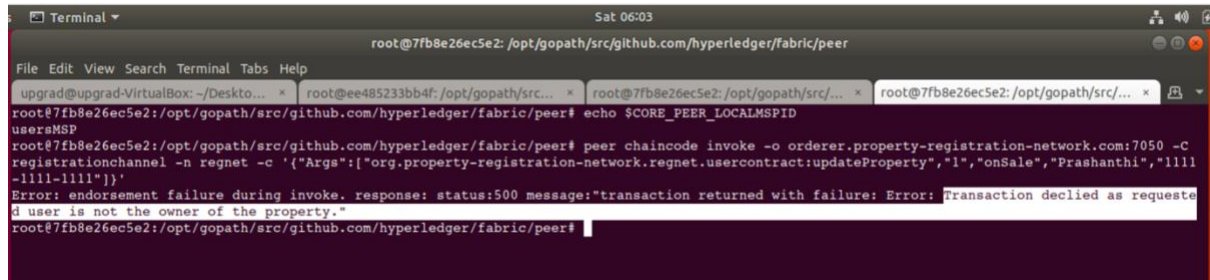
Validation Scenario#3: Invalid User Details


```

root@7fb8e26ec5e2:/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.usercontract:updateProperty","1","onSale","Rajesh","0000-0000-00001"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Invalid User Details. No user exists with provided name & aadhaarNo combination."
root@7fb8e26ec5e2:/opt/gopath/src/github.com/hyperledger/fabric/peer#

```

Validation Scenario#4: Update request by valid user. But, Not the owner of Property

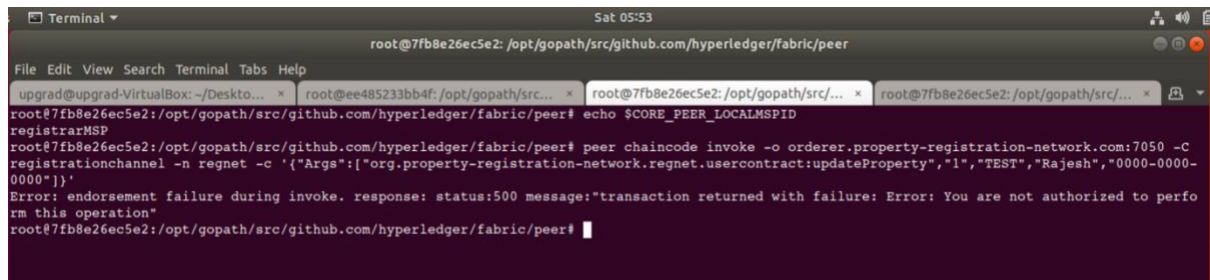


```

Sat 06:03
root@7fb8e26ec5e2:/opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... x root@ee485233bb4f:/opt/gopath/src... x root@7fb8e26ec5e2:/opt/gopath/src/... x root@7fb8e26ec5e2:/opt/gopath/src/... x
root@7fb8e26ec5e2:/opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
usersMSP
root@7fb8e26ec5e2:/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.usercontract:updateProperty","1","onSale","Prashanthi","1111-1111-1111"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Transaction declined as requester user is not the owner of the property."
root@7fb8e26ec5e2:/opt/gopath/src/github.com/hyperledger/fabric/peer#

```

Validation Scenario#5: Invalid Initiator



```

Sat 05:53
root@7fb8e26ec5e2:/opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... x root@ee485233bb4f:/opt/gopath/src... x root@7fb8e26ec5e2:/opt/gopath/src/... x root@7fb8e26ec5e2:/opt/gopath/src/... x
root@7fb8e26ec5e2:/opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
registrarmSP
root@7fb8e26ec5e2:/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.usercontract:updateProperty","1","TEST","Rajesh","0000-0000-0000"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: You are not authorized to perform this operation"
root@7fb8e26ec5e2:/opt/gopath/src/github.com/hyperledger/fabric/peer#

```

purchaseProperty

TAB 4: CLI – Connected to USERMSP

Before invoking the **purchaseProperty** command, we have created new User named **Prashanthi** and recharged her account with **2000** UpGrad coins.


```
Terminal
Sat 06:02
root@7fb8e26c5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer

upgrad@upgrad-VirtualBox: ~$ Desktop...
root@ee48523bb4f: /opt/gopath/src/...
root@7fb8e26c5e2: /opt/gopath/src/...
root@7fb8e26c5e2: /opt/gopath/src/...

root@7fb8e26c5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# clear

root@7fb8e26c5e2: /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.usercontract:requestNewUser","Prashanthi","prashanthi@gmail.com","9866776699","1111-1111-1111"]}'

2020-05-02 00:29:55.101 UTC [chaincodeCmd] chaincodeInvokeOrQuery => INFO 001 Chaincode invoke successful. result: status:200 payload:{"aadhaarNo":"1111-1111-1111","name":"Prashanthi","email":"prashanthi@gmail.com","phoneNo":"9866776699","state":"REQUESTED","createdBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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":"2020-05-02T00:29:55.298Z","updatedAt":"2020-05-02T00:29:55.298Z"}

root@7fb8e26c5e2: /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.usercontract:rechargeUserAccount","Prashanthi","1111-1111-1111","upgradCoins"]}'

2020-05-02 00:31:31.501 UTC [chaincodeCmd] chaincodeInvokeOrQuery => INFO 001 Chaincode invoke successful. result: status:200 payload:{"aadhaarNo":"1111-1111-1111","name":"Prashanthi","email":"prashanthi@gmail.com","phoneNo":"9866776699","state":"APPROVED","createdBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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":"2020-05-02T00:29:55.298Z","updatedAt":"2020-05-02T00:30:36.326Z","upgradCoins":1000,"updatedBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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@7fb8e26c5e2: /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.usercontract:rechargeUserAccount","Prashanthi","1111-1111-1111","upgradCoins"]}'

2020-05-02 00:31:36.396 UTC [chaincodeCmd] chaincodeInvokeOrQuery => INFO 001 Chaincode invoke successful. result: status:200 payload:{"aadhaarNo":"1111-1111-1111","name":"Prashanthi","email":"prashanthi@gmail.com","phoneNo":"9866776699","state":"APPROVED","createdBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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":"2020-05-02T00:29:55.298Z","updatedAt":"2020-05-02T00:30:36.326Z","upgradCoins":2000,"updatedBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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@7fb8e26c5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

TAB 4: CLI – Connected to USERMSP

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.**usercontract:purchaseProperty**","1","Prashanthi","1111-1111-1111"]}]'

Please refer the comments on screenshot for the reflected changes on **Property asset** and **User asset**

```
Terminal
Sat 06:27
root@7fb8e26c5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer

File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~$ Desktop...
root@ee48523bb4f: /opt/gopath/src/...
root@7fb8e26c5e2: /opt/gopath/src/...
root@7fb8e26c5e2: /opt/gopath/src/...

root@7fb8e26c5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo SCORE_PEER_LOCALMSPID
usersMSP
root@7fb8e26c5e2: /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.usercontract:purchaseProperty","1","Prashanthi","1111-1111-1111"]}'

2020-05-02 00:54:58.290 UTC [chaincodeCmd] chaincodeInvokeOrQuery => INFO 001 Chaincode invoke successful. result: status:200 payload:{"propertyId":"1","price":500,"owner":"u0000org.property-registration-network.regnet.user\\u0000Prashanthi\\u00001111-1111-1111\\u0000","createdBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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":"2020-05-01T23:49:45.007Z","updatedAt":"2020-05-01T23:49:47.719Z","upgradCoins":1000,"updatedBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com","updatedAt":"2020-05-02T00:54:58.281Z","status":"REGISTERED"}

root@7fb8e26c5e2: /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.usercontract:viewUser","Rajesh","0000-0000-0000"]}'

2020-05-02 00:55:12.593 UTC [chaincodeCmd] chaincodeInvokeOrQuery => INFO 001 Chaincode invoke successful. result: status:200 payload:{"aadhaarNo":"0000-0000-0000","name":"Rajesh","email":"v4u2chat@gmail.com","phoneNo":"9866776600","state":"APPROVED","createdBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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":"2020-05-01T23:35:38.576Z","updatedAt":"2020-05-01T23:35:47.719Z","upgradCoins":1000,"updatedBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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@7fb8e26c5e2: /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.usercontract:viewUser","Prashanthi","1111-1111-1111"]}'

2020-05-02 00:56:120.197 UTC [chaincodeCmd] chaincodeInvokeOrQuery => INFO 001 Chaincode invoke successful. result: status:200 payload:{"aadhaarNo":"1111-1111-1111","name":"Prashanthi","email":"prashanthi@gmail.com","phoneNo":"9866776699","state":"APPROVED","createdBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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":"2020-05-02T00:29:55.298Z","updatedAt":"2020-05-02T00:30:36.326Z","upgradCoins":1500,"updatedBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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@7fb8e26c5e2: /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.usercontract:viewProperty","1"]}'

2020-05-02 00:57:06.447 UTC [chaincodeCmd] chaincodeInvokeOrQuery => INFO 001 Chaincode invoke successful. result: status:200 payload:{"propertyId":"1","price":500,"owner":"u0000org.property-registration-network.regnet.user\\u0000Prashanthi\\u00001111-1111-1111\\u0000","createdBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#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":"2020-05-01T23:49:45.007Z","updatedAt":"2020-05-01T23:35:47.719Z","upgradCoins":1000,"updatedBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin#registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com","updatedAt":"2020-05-02T00:54:58.281Z","status":"REGISTERED"}

root@7fb8e26c5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```


Validation Scenario#1: Invalid Property Status - NOT FOR SALE

```
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... x root@ee485233bb4f: /opt/gopath/src... x root@7fb8e26ec5e2: /opt/gopath/src/... x root@7fb8e26ec5e2: /opt/gopath/src/... x
root@7fb8e26ec5e2: /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.usercontract:purchaseProperty","1","Prashanthi","1111-1111-1111"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Property is NOT FOR SALE"
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario#2: Invalid Property ID

```
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... x root@ee485233bb4f: /opt/gopath/src... x root@7fb8e26ec5e2: /opt/gopath/src/... x root@7fb8e26ec5e2: /opt/gopath/src/... x
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
usersMSP
root@7fb8e26ec5e2: /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.usercontract:purchaseProperty","11","Prashanthi","1111-1111-1111"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Invalid Property Details."
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario#3: Invalid User Details

```
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... x root@ee485233bb4f: /opt/gopath/src... x root@7fb8e26ec5e2: /opt/gopath/src/... x root@7fb8e26ec5e2: /opt/gopath/src/... x
root@7fb8e26ec5e2: /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.usercontract:purchaseProperty","1","Prashanthi","1111-1111-1111"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Property is NOT FOR SALE"
root@7fb8e26ec5e2: /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.usercontract:purchaseProperty","11","Prashanthi","1111-1111-1111"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Invalid Property Details. We al ready have a property registered with us for the given Property ID"
root@7fb8e26ec5e2: /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.usercontract:purchaseProperty","1","Prashanthi","1111-1111-1111"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Invalid User Details. No user e xists with provided name & aadhaarNo combination."
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario#4: Already Owner

```
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desktop... x root@ee485233bb4f: /opt/gopath/src... x root@7fb8e26ec5e2: /opt/gopath/src/... x root@7fb8e26ec5e2: /opt/gopath/src/... x
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
usersMSP
root@7fb8e26ec5e2: /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.usercontract:purchaseProperty","1","Prashanthi","1111-1111-1111"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Invalid Property Details."
root@7fb8e26ec5e2: /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.usercontract:updateProperty","1","onSale","Prashanthi","1111-1111-1111"]}'
2020-05-02 01:26:42.992 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\"propertyId\":\"1\",\"price\":500,\"owner\":\"\\u0000org.property-registration-network.regnet.user\\u0000Prashanthi\\u00001111-1111-1111\\u0000\\\", \"createdBy\":\"\\u0000Prashanthi\\u00001111-1111-1111\\u0000\\\", \"createdAt\":\"2020-05-01T23:49:45.007Z\", \"updatedAt\":\"2020-05-02T01:26:42.986Z\", \"status\":\"ON SALE\"}"
root@7fb8e26ec5e2: /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.usercontract:purchaseProperty","1","Prashanthi","1111-1111-1111"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: You are already owns this prop erty"
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer#
```

Validation Scenario#5: Invalid Initiator

```
Terminal
Sat 06:50
root@7fb8e26ec5e2: /opt/gopath/src/github.com/hyperledger/fabric/peer

File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~/Desкто... x root@ee485233bb4f: /opt/gopath/src/... x root@7fb8e26ec5e2: /opt/gopath/src/... x root@7fb8e26ec5e2: /opt/gopath/src/... x
root@7fb8e26ec5e2:/opt/gopath/src/github.com/hyperledger/fabric/peer# echo $CORE_PEER_LOCALMSPID
registrarmSP
root@7fb8e26ec5e2:/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.usercontract:purchaseProperty","1","Prashanthi","1111-1111-1
111"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: You are not authorized to perfo
rm this operation"
root@7fb8e26ec5e2:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```