Pharma Net Testing Instructions And Samples

Steps to set up network:

- Please rename pharma-net to pharmachain. Open terminal pointing to the network folder of pharmachain. Create crypto material using the cryptogen tool. Using following commands:-
  - export PATH=~/workspace/pharmachain/network/bin:$PATH
  - cryptogen generate --config=./crypto-config.yaml

```
upgrad@upgrad-VirtualBox:~/workspace/capstoneProject/pharma-net/network$ export PATH=~/workspace/capstoneProject/pharma-net/network/bin:$PATH
upgrad@upgrad-VirtualBox:~/workspace/capstoneProject/pharma-net/network$ cd ..
upgrad@upgrad-VirtualBox:~/workspace/capstoneProject/pharma-net$ ls
application  chaincode  network  README.md  test
upgrad@upgrad-VirtualBox:~/workspace/capstoneProject/pharma-net$ cd network/
upgrad@upgrad-VirtualBox:~/workspace/capstoneProject/pharma-net/network$ ls
bin                configtx.yaml  crypto-config.yaml  docker-compose.yml  scripts
channel-artifacts  crypto-config  docker-base         fabricNetwork.sh
upgrad@upgrad-VirtualBox:~/workspace/capstoneProject/pharma-net/network$ cryptogen generate --config=./crypto-config.yaml
manufacturer.pharma-network.com
distributor.pharma-network.com
retailer.pharma-network.com
consumer.pharma-network.com
transporter.pharma-network.com
upgrad@upgrad-VirtualBox:~/workspace/capstoneProject/pharma-net/network$
```

- Create genesis block and channel using configtxgen tool. Using following command: -
  - configtxgen -profile OrdererGenesis -channelID pharma-sys-channel -outputBlock ./channel-artifacts/genesis.block
  - configtxgen -profile PharmaChannel -outputCreateChannelTx ./channel-artifacts/channel.tx -channelID pharmachannel

```
upgrad@upgrad-VirtualBox:~/workspace/capstoneProject/pharma-net/network$ configtxgen -profile OrdererGenesis -channelID pharma-sys-channel -outputBlock ./channel-artifacts/genesis.block
2021-08-29 15:13:23.068 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2021-08-29 15:13:23.283 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 002 orderer type: solo
2021-08-29 15:13:23.283 IST [common.tools.configtxgen.localconfig] Load -> INFO 003 Loaded configuration: /home/upgrad/workspace/capstoneProject/pharma-net/network/configtx.yaml
2021-08-29 15:13:23.458 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 004 orderer type: solo
2021-08-29 15:13:23.470 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 005 Loaded configuration: /home/upgrad/workspace/capstoneProject/pharma-net/network/configtx.yaml
2021-08-29 15:13:23.523 IST [common.tools.configtxgen] doOutputBlock -> INFO 006 Generating genesis block
2021-08-29 15:13:23.529 IST [common.tools.configtxgen] doOutputBlock -> INFO 007 Writing genesis block
```

- Create anchor peer update transactions using configtxgen tool. Using following commands: -
  - configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/manufacturerMSPanchors.tx -channelID pharmachannel -asOrg manufacturerMSP
  - configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/distributorMSPanchors.tx -channelID pharmachannel -asOrg distributorMSP
  - configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/retailerMSPanchors.tx -channelID pharmachannel -asOrg retailerMSP
  - configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/consumerMSPanchors.tx -channelID pharmachannel -asOrg consumerMSP
  - configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/transporterMSPanchors.tx -channelID pharmachannel -asOrg transporterMSP

```
upgrad@upgrad-VirtualBox:~/workspace/capstoneProject/pharma-net/network$ configtxgen -profile PharmaChannel -outputCreateChannelTx ./channel-artifacts/channel.tx -channelID pharmach
annel -configPath=/home/upgrad/workspace/capstoneProject/pharma-net/network/
2021-08-29 15:57:28.417 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2021-08-29 15:57:28.560 IST [common.tools.configtxgen.localconfig] Load -> INFO 002 Loaded configuration: /home/upgrad/workspace/capstoneProject/pharma-net/network/configtx.yaml
2021-08-29 15:57:28.744 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 003 orderer type: solo
2021-08-29 15:57:28.744 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 004 Loaded configuration: /home/upgrad/workspace/capstoneProject/pharma-net/network/configtx.
yaml
2021-08-29 15:57:28.744 IST [common.tools.configtxgen] doOutputChannelCreateTx -> INFO 005 Generating new channel configtx
2021-08-29 15:57:28.744 IST [common.tools.configtxgen.encoder] NewChannelGroup -> WARN 006 Default policy emission is deprecated, please include policy specifications for the channe
l group in configtx.yaml
2021-08-29 15:57:28.758 IST [common.tools.configtxgen.encoder] NewChannelGroup -> WARN 007 Default policy emission is deprecated, please include policy specifications for the channe
l group in configtx.yaml
2021-08-29 15:57:28.777 IST [common.tools.configtxgen] doOutputChannelCreateTx -> INFO 008 Writing new channel tx
upgrad@upgrad-VirtualBox:~/workspace/capstoneProject/pharma-net/network$
```

- Create docker container using command: -
  - docker-compose -f ./docker-compose.yml up -d

```
upgrad@upgrad-VirtualBox:~/workspace/pharmachain/network$ docker-compose -f ./docker-compose.yml up -d
Creating network "network_pharma" with the default driver
Creating orderer.pharma-network.com ...
Creating ca.transporter.pharma-network.com ...
Creating peer0.retailer.pharma-network.com ...
Creating ca.manufacturer.pharma-network.com ...
Creating ca.retailer.pharma-network.com    ...
Creating ca.consumer.pharma-network.com    ...
Creating orderer.pharma-network.com               ... done
Creating ca.transporter.pharma-network.com        ... done
Creating peer0.retailer.pharma-network.com        ... done
Creating ca.manufacturer.pharma-network.com       ... done
Creating ca.retailer.pharma-network.com           ... done
Creating ca.consumer.pharma-network.com           ... done
Creating peer1.distributor.pharma-network.com  ... done
Creating peer1.consumer.pharma-network.com        ... done
Creating peer0.manufacturer.pharma-network.com ... done
Creating peer1.manufacturer.pharma-network.com ... done
Creating peer0.distributor.pharma-network.com  ... done
Creating peer1.retailer.pharma-network.com        ... done
Creating peer0.transporter.pharma-network.com  ... done
Creating chaincode                                ... done
Creating peer1.transporter.pharma-network.com  ... done
Creating peer0.consumer.pharma-network.com        ... done
Creating ca.distributor.pharma-network.com        ... done
Creating cli                                      ... done
```

- Create channel and make peers join channel using following commands: -
  - docker exec -it cli /bin/bash
  - peer channel create -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/channel.tx
  - peer channel join -b pharmachannel.block
  - CORE_PEER_ADDRESS=peer1.manufacturer.pharma-network.com:8051
  - peer channel join -b pharmachannel.block
  - CORE_PEER_LOCALMSPID="distributorMSP"
  - CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/distributor.pharma-network.com/users/Admin@distributor.pharma-network.com/msp
  - CORE_PEER_ADDRESS=peer0.distributor.pharma-network.com:9051
  - peer channel join -b pharmachannel.block
  - CORE_PEER_ADDRESS=peer1.distributor.pharma-network.com:10051
  - peer channel join -b pharmachannel.block
  - CORE_PEER_LOCALMSPID="retailerMSP"
  - CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/retailer.pharma-network.com/users/Admin@retailer.pharma-network.com/msp
  - CORE_PEER_ADDRESS=peer0.retailer.pharma-network.com:11051
  - peer channel join -b pharmachannel.block
  - CORE_PEER_ADDRESS=peer1.retailer.pharma-network.com:12051

- ○ peer channel join -b pharmachannel.block
- ○ CORE_PEER_LOCALMSPID="consumerMSP"
- ○ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric /peer/crypto/peerOrganizations/consumer.pharma-network.com/users/Admin@co nsumer.pharma-network.com/msp
- ○ CORE_PEER_ADDRESS=peer0.consumer.pharma-network.com:13051
- ○ peer channel join -b pharmachannel.block
- ○ CORE_PEER_ADDRESS=peer1.consumer.pharma-network.com:14051
- ○ peer channel join -b pharmachannel.block
- ○ CORE_PEER_LOCALMSPID="transporterMSP"
- ○ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric /peer/crypto/peerOrganizations/transporter.pharma-network.com/users/Admin@tr ansporter.pharma-network.com/msp
- ○ CORE_PEER_ADDRESS=peer0.transporter.pharma-network.com:15051
- ○ peer channel join -b pharmachannel.block
- ○ CORE_PEER_ADDRESS=peer1.transporter.pharma-network.com:16051
- ○ peer channel join -b pharmachannel.block

- ● Update anchor peers on network using following commands: -
  - ○ CORE_PEER_LOCALMSPID="manufacturerMSP"
  - ○ CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric /peer/crypto/peerOrganizations/manufacturer.pharma-network.com/users/Admin @manufacturer.pharma-network.com/msp
  - ○ CORE_PEER_ADDRESS=peer0.manufacturer.pharma-network.com:7051
  - ○ peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/manufacturerMSPanchors.tx
  - ○ CORE_PEER_LOCALMSPID="distributorMSP"

- CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/distributor.pharma-network.com/users/Admin@distributor.pharma-network.com/msp
- CORE_PEER_ADDRESS=peer0.distributor.pharma-network.com:9051
- peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/distributorMSPanchors.tx
- CORE_PEER_LOCALMSPID="retailerMSP"
- CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/retailer.pharma-network.com/users/Admin@retailer.pharma-network.com/msp
- CORE_PEER_ADDRESS=peer0.retailer.pharma-network.com:11051
- peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/retailerMSPanchors.tx
- CORE_PEER_LOCALMSPID="consumerMSP"
- CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/consumer.pharma-network.com/users/Admin@consumer.pharma-network.com/msp
- CORE_PEER_ADDRESS=peer0.consumer.pharma-network.com:13051
- peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/consumerMSPanchors.tx
- CORE_PEER_LOCALMSPID="transporterMSP"
- CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/transporter.pharma-network.com/users/Admin@transporter.pharma-network.com/msp
- CORE_PEER_ADDRESS=peer0.transporter.pharma-network.com:15051
- peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/transporterMSPanchors.tx

```
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="manufacturerMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/manufacturer.pharma-network.com/users/Admin@manufacturer.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.manufacturer.pharma-network.com:7051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/manufacturerMSPanchors.tx
2021-09-03 18:41:07.760 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2021-09-03 18:41:07.811 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="distributorMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/distributor.pharma-network.com/users/Admin@distributor.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.distributor.pharma-network.com:9051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/distributorMSPanchors.tx
2021-09-03 18:41:46.711 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2021-09-03 18:41:46.737 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="retailerMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/retailer.pharma-network.com/users/Admin@retailer.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.retailer.pharma-network.com:11051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/retailerMSPanchors.tx
2021-09-03 18:42:22.917 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2021-09-03 18:42:22.964 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="consumerMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/consumer.pharma-network.com/users/Admin@consumer.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.consumer.pharma-network.com:13051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/consumerMSPanchors.tx
2021-09-03 18:42:54.322 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2021-09-03 18:42:54.365 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="transporterMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/transporter.pharma-network.com/users/Admin@transporter.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.transporter.pharma-network.com:15051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/transporterMSPanchors.tx
2021-09-03 18:43:26.011 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2021-09-03 18:43:26.039 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
```

- Install chaincode on the chaincode container in a new terminal window using following commands: -
  - docker exec -it chaincode /bin/bash
  - npm install
  - npm run start-dev

```
upgrad@upgrad-VirtualBox:~/workspace/pharmachain/network$ docker exec -it chaincode /bin/bash
root@d39469eda9d9:/opt/gopath/src/chaincode# npm install

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

make: Entering directory '/opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/@ampretia/x509/build'
  CXX(target) Release/obj.target/x509/src/addon.o
  CXX(target) Release/obj.target/x509/src/x509.o
In file included from /root/.cache/node-gyp/8.16.1/include/node/openssl/asn1.h:65:0,
                 from ../include/x509.h:14,
                 from ../src/x509.cc:10:
../src/x509.cc: In function 'v8::Local<v8::Value> try_parse(const string&)':
/root/.cache/node-gyp/8.16.1/include/node/openssl/bio.h:589:34: warning: value computed is not used [-Wunused-value]
 # define BIO_set_close(b,c)      (int)BIO_ctrl(b,BIO_CTRL_SET_CLOSE,(c),NULL)
                                  ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
../src/x509.cc:409:5: note: in expansion of macro 'BIO_set_close'
     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/@ampretia/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 WARN pharmanet@0.0.1 No repository field.
npm WARN pharmanet@0.0.1 No license field.

added 631 packages from 1102 contributors and audited 631 packages in 117.115s

5 packages are looking for funding
  run `npm fund` for details

found 178 vulnerabilities (110 low, 3 moderate, 62 high, 3 critical)
  run `npm audit fix` to fix them, or `npm audit` for details


       New major version of npm available! 6.11.3 → 7.11.0
     Changelog: https://github.com/npm/cli/releases/tag/v7.11.0
              Run npm install -g npm to update!
```

```
root@d39469eda9d9:/opt/gopath/src/chaincode# npm run start-dev

> pharmanet@0.0.1 start-dev /opt/gopath/src/chaincode
> fabric-chaincode-node start --peer.address peer0.consumer.pharma-network.com:13053 --chaincode-id-name pharmanet: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.
2021-09-04T07:04:29.385Z info [shim:contracts-spi/bootstrap.js]            No metadata file supplied in contract, introspection will generate all the data
2021-09-04T07:04:29.387Z 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.
2021-09-04T07:04:30.046Z info [shim:lib/chaincode.js]                      Registering with peer peer0.consumer.pharma-network.com:13053 as chaincode "pharmanet:1.1"

Command succeeded

2021-09-04T07:04:30.305Z info [shim:lib/handler.js]                        Successfully registered with peer node. State transferred to "established"
2021-09-04T07:04:30.308Z info [shim:lib/handler.js]                        Successfully established communication with peer node. State transferred to "ready"
```

- Open a new terminal window and install chaincode on all peers using following commands: -
  - docker exec -it cli /bin/bash
  - peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
  - CORE_PEER_ADDRESS=peer1.manufacturer.pharma-network.com:8051
  - peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
  - # Point to other peers and make them join the channel. CLI by default connected to manufacturer peer0
  - CORE_PEER_LOCALMSPID="distributorMSP"
  - CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/distributor.pharma-network.com/users/Admin@distributor.pharma-network.com/msp
  - CORE_PEER_ADDRESS=peer0.distributor.pharma-network.com:9051
  - peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
  - CORE_PEER_ADDRESS=peer1.distributor.pharma-network.com:10051

- peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
- CORE_PEER_LOCALMSPID="retailerMSP"
- CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/retailer.pharma-network.com/users/Admin@retailer.pharma-network.com/msp
- CORE_PEER_ADDRESS=peer0.retailer.pharma-network.com:11051
- peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
- CORE_PEER_ADDRESS=peer1.retailer.pharma-network.com:12051
- peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
- CORE_PEER_LOCALMSPID="consumerMSP"
- CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/consumer.pharma-network.com/users/Admin@consumer.pharma-network.com/msp
- CORE_PEER_ADDRESS=peer0.consumer.pharma-network.com:13051
- peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
- CORE_PEER_ADDRESS=peer1.consumer.pharma-network.com:14051
- peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
- CORE_PEER_LOCALMSPID="transporterMSP"
- CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/transporter.pharma-network.com/users/Admin@transporter.pharma-network.com/msp
- CORE_PEER_ADDRESS=peer0.transporter.pharma-network.com:15051
- peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
- CORE_PEER_ADDRESS=peer1.transporter.pharma-network.com:16051
- peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/

```
upgrad@upgrad-VirtualBox:~/workspace/pharmachain/network$ docker exec -it cli /bin/bash
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:07:22.747 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:07:22.749 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:07:23.723 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer1.manufacturer.pharma-network.com:8051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:08:22.821 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:08:22.821 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:08:23.391 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="distributorMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/distributor.pharma-network.com/users/Admin@distributor.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.distributor.pharma-network.com:9051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:09:17.389 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:09:17.389 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:09:17.767 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer1.distributor.pharma-network.com:10051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:09:39.103 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:09:39.104 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:09:40.070 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="retailerMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/retailer.pharma-network.com/users/Admin@retailer.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.retailer.pharma-network.com:11051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:10:12.710 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:10:12.712 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:10:13.134 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer1.retailer.pharma-network.com:12051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:11:26.371 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:11:26.371 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:11:26.802 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="consumerMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/consumer.pharma-network.com/users/Admin@consumer.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.consumer.pharma-network.com:13051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:12:16.273 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:12:16.274 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:12:16.729 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer1.consumer.pharma-network.com:14051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:12:36.228 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
```

```
2021-09-04 07:09:17.767 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer1.distributor.pharma-network.com:10051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:09:39.103 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:09:39.104 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:09:40.070 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="retailerMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/retailer.pharma-network.com/users/Admin@retailer.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.retailer.pharma-network.com:11051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:10:12.710 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:10:12.712 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:10:13.134 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer1.retailer.pharma-network.com:12051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:11:26.371 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:11:26.371 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:11:26.802 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="consumerMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/consumer.pharma-network.com/users/Admin@consumer.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.consumer.pharma-network.com:13051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:12:16.273 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:12:16.274 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:12:16.729 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer1.consumer.pharma-network.com:14051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:12:36.228 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:12:36.228 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:12:36.747 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="transporterMSP"
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/transporter.pharma-network.com/users/Admin@transporter.pharma-network.com/msp
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.transporter.pharma-network.com:15051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:13:17.132 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:13:17.153 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:13:17.699 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer1.transporter.pharma-network.com:16051
root@6da5dcf9aff4:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
2021-09-04 07:13:46.082 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2021-09-04 07:13:46.086 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2021-09-04 07:13:46.598 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
```
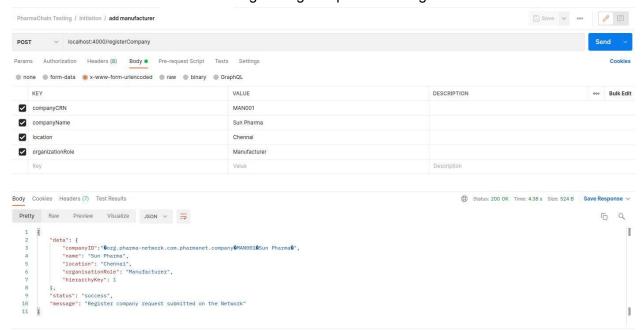
- Instantiate the chaincode from any one peer. Here we are pointing to peer0 of the manufacturer to instantiate the chaincode as the dev chaincode container is currently pointing to the same.
  - CORE_PEER_LOCALMSPID="manufacturerMSP"
  - CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/manufacturer.pharma-network.com/users/Admin@manufacturer.pharma-network.com/msp
  - CORE_PEER_ADDRESS=peer0.manufacturer.pharma-network.com:7051
  - peer chaincode instantiate -o orderer.pharma-network.com:7050 -C pharmachannel -n pharmanet -l node -v 1.1 -c '{"Args":["org.pharma-network.pharmanet:instantiate"]}' -P "OR ('manufacturerMSP.member','distributorMSP.member','retailerMSP.member','consumerMSP.member','transporterMSP.member')"
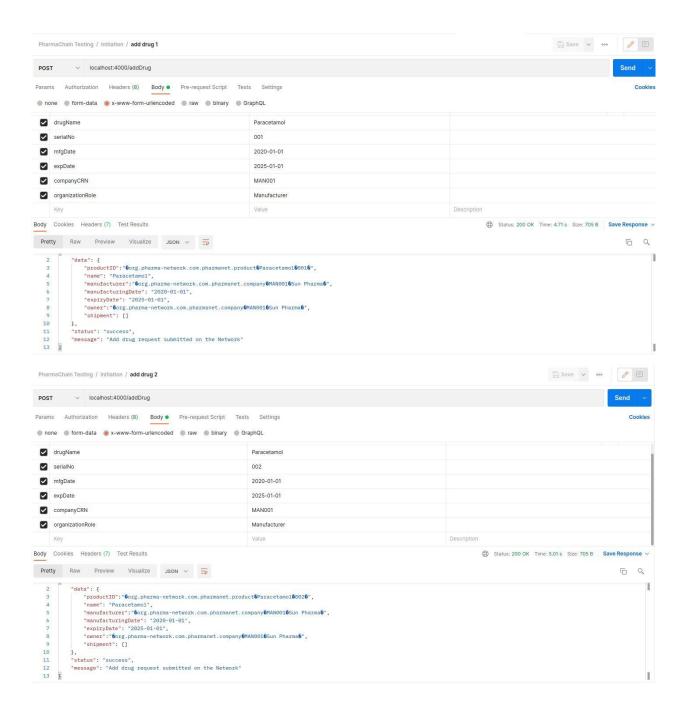
- Now the network setup is complete. Now to the node application.
- Go to application folder and open it in a new terminal and run following commands: -
  - npm install
  - node .

Steps to test the Network:

- If you generated the crypto material again kindly use AddToWallet API to create identity again. I have checked in the code with identities created corresponding to crypto material already generated and checked in. In the application folder 1_addToWallet.js the Main methods are commented. Uncommenting them and running node 1_addToWallet.js will suffice.
- Inside the Initiation Folder all APIs related to Manufacturing are available. They can be run. Below are the screenshots for registering companies & drugs:

🖫 Save ∨ ⋯ | ✎ 💬

| POST ∨ | localhost:4000/addDrug | | Send ∨ |

Params Authorization Headers (8) Body ● Pre-request Script Tests Settings   Cookies

○ none ○ form-data ● x-www-form-urlencoded ○ raw ○ binary ○ GraphQL

☑	drugName	Paracetamol	
☑	serialNo	001	
☑	mfgDate	2020-01-01	
☑	expDate	2025-01-01	
☑	companyCRN	MAN001	
☑	organizationRole	Manufacturer	
	Key	Value	Description

Body Cookies Headers (7) Test Results   🌐 Status: 200 OK Time: 4.71 s Size: 705 B **Save Response** ∨

Pretty Raw Preview Visualize JSON ∨ ⇥   ⧉ 🔍

```
 2        "data": {
 3            "productID":"°org.pharma-network.com.pharmanet.product°Paracetamol°001°",
 4            "name": "Paracetamol",
 5            "manufacturer":"°org.pharma-network.com.pharmanet.company°MAN001°Sun Pharma°",
 6            "manufacturingDate": "2020-01-01",
 7            "expiryDate": "2025-01-01",
 8            "owner":"°org.pharma-network.com.pharmanet.company°MAN001°Sun Pharma°",
 9            "shipment": []
10        },
11        "status": "success",
12        "message": "Add drug request submitted on the Network"
13    }
```

🖫 Save ∨ ⋯ | ✎ 💬

| POST ∨ | localhost:4000/addDrug | | Send ∨ |

Params Authorization Headers (8) Body ● Pre-request Script Tests Settings   Cookies

○ none ○ form-data ● x-www-form-urlencoded ○ raw ○ binary ○ GraphQL

☑	drugName	Paracetamol	
☑	serialNo	002	
☑	mfgDate	2020-01-01	
☑	expDate	2025-01-01	
☑	companyCRN	MAN001	
☑	organizationRole	Manufacturer	
	Key	Value	Description

Body Cookies Headers (7) Test Results   🌐 Status: 200 OK Time: 5.01 s Size: 705 B **Save Response** ∨

Pretty Raw Preview Visualize JSON ∨ ⇥   ⧉ 🔍

```
 2        "data": {
 3            "productID":"°org.pharma-network.com.pharmanet.product°Paracetamol°002°",
 4            "name": "Paracetamol",
 5            "manufacturer":"°org.pharma-network.com.pharmanet.company°MAN001°Sun Pharma°",
 6            "manufacturingDate": "2020-01-01",
 7            "expiryDate": "2025-01-01",
 8            "owner":"°org.pharma-network.com.pharmanet.company°MAN001°Sun Pharma°",
 9            "shipment": []
10        },
11        "status": "success",
12        "message": "Add drug request submitted on the Network"
13    }
```

Save ⌄ ○○○ ✏️

POST ⌄ localhost:4000/addDrug

Send ⌄

Params ● | Authorization | Headers (8) | Body ● | Pre-request Script | Tests | Settings

Cookies

○ none ○ form-data ● x-www-form-urlencoded ○ raw ○ binary ○ GraphQL

☑	drugName	Paracetamol	
☑	serialNo	003	
☑	mfgDate	2021-01-01	
☑	expDate	2025-01-01	
☑	companyCRN	MAN001	
☑	organizationRole	Manufacturer	
	Key	Value	Description

Body | Cookies | Headers (7) | Test Results

Status: 200 OK Time: 2.71 s Size: 705 B Save Response ⌄

Pretty | Raw | Preview | Visualize | JSON ⌄

```
 1  {
 2      "data": {
 3          "productID":"org.pharma-network.com.pharmanet.productParacetamol003",
 4          "name": "Paracetamol",
 5          "manufacturer":"org.pharma-network.com.pharmanet.companyMAN001Sun Pharma",
 6          "manufacturingDate": "2021-01-01",
 7          "expiryDate": "2025-01-01",
 8          "owner":"org.pharma-network.com.pharmanet.companyMAN001Sun Pharma",
 9          "shipment": []
10      },
11      "status": "success",
12      "message": "Add drug request submitted on the Network"
```

Save ⌄ ○○○ ✏️

POST ⌄ localhost:4000/addDrug

Send ⌄

Params | Authorization | Headers (8) | Body ● | Pre-request Script | Tests | Settings

Cookies

○ none ○ form-data ● x-www-form-urlencoded ○ raw ○ binary ○ GraphQL

☑	drugName	Paracetamol	
☑	serialNo	004	
☑	mfgDate	2021-01-01	
☑	expDate	2025-01-01	
☑	companyCRN	MAN001	
☑	organizationRole	Manufacturer	
	Key	Value	Description

Body | Cookies | Headers (7) | Test Results

Status: 200 OK Time: 2.87 s Size: 705 B Save Response ⌄

Pretty | Raw | Preview | Visualize | JSON ⌄

```
 2      "data": {
 3          "productID":"org.pharma-network.com.pharmanet.productParacetamol004",
 4          "name": "Paracetamol",
 5          "manufacturer":"org.pharma-network.com.pharmanet.companyMAN001Sun Pharma",
 6          "manufacturingDate": "2021-01-01",
 7          "expiryDate": "2025-01-01",
 8          "owner":"org.pharma-network.com.pharmanet.companyMAN001Sun Pharma",
 9          "shipment": []
10      },
11      "status": "success",
12      "message": "Add drug request submitted on the Network"
13  }
```

Save ∨   ○○○   ✎ ▭

POST ∨	localhost:4000/registerCompany	Send ∨

Params   Authorization   Headers (8)   Body ●   Pre-request Script   Tests   Settings   Cookies

○ none   ○ form-data   ● x-www-form-urlencoded   ○ raw   ○ binary   ○ GraphQL

	KEY	VALUE	DESCRIPTION	○○○	Bulk Edit
☑	companyCRN	TRA001			
☑	companyName	FedEx			
☑	location	Delhi			
☑	organizationRole	Transporter			
	Key	Value	Description		

Body   Cookies   Headers (7)   Test Results   ⊕ Status: 200 OK   Time: 1 m 53.46 s   Size: 512 B   Save Response ∨

Pretty   Raw   Preview   Visualize   JSON ∨   ⇥

```
1   {
2       "data": {
3           "companyID":"\u0006org.pharma-network.com.pharmanet.company\u0006TRA001\u0006FedEx\u0006",
4           "name": "FedEx",
5           "location": "Delhi",
6           "organisationRole": "Transporter",
7           "hierarchyKey": -1
8       },
9       "status": "success",
10      "message": "Register company request submitted on the Network"
11  }
```

Save ∨   ○○○   ✎ ▭

POST ∨	localhost:4000/registerCompany	Send ∨

Params ●   Authorization   Headers (8)   Body ●   Pre-request Script   Tests   Settings   Cookies

○ none   ○ form-data   ● x-www-form-urlencoded   ○ raw   ○ binary   ○ GraphQL

	KEY	VALUE	DESCRIPTION	○○○	Bulk Edit
☑	companyCRN	TRA002			
☑	companyName	Blue Dart			
☑	location	Bangalore			
☑	organizationRole	Transporter			
	Key	Value	Description		

Body   Cookies   Headers (7)   Test Results   ⊕ Status: 200 OK   Time: 3.33 s   Size: 524 B   Save Response ∨

Pretty   Raw   Preview   Visualize   JSON ∨   ⇥

```
1   {
2       "data": {
3           "companyID":"\u0006org.pharma-network.com.pharmanet.company\u0006TRA002\u0006Blue Dart\u0006",
4           "name": "Blue Dart",
5           "location": "Bangalore",
6           "organisationRole": "Transporter",
7           "hierarchyKey": -1
8       },
9       "status": "success",
10      "message": "Register company request submitted on the Network"
11  }
```

POST ∨ localhost:4000/registerCompany **Send** ∨

Params   Authorization   Headers (8)   Body ●   Pre-request Script   Tests   Settings   Cookies

Query Params

KEY	VALUE	DESCRIPTION	ooo	Bulk Edit
Key	Value	Description		

Body   Cookies   Headers (7)   Test Results   Status: 200 OK   Time: 2.87 s   Size: 511 B   Save Response ∨

Pretty   Raw   Preview   Visualize   JSON ∨

```json
{
    "data": [
        "companyID":"org.pharma-network.com.pharmanet.companyRET0020upgrad",
        "name": "upgrad",
        "location": "Mumbai",
        "organisationRole": "Retailer",
        "hierarchyKey": 3
    },
    "status": "success",
    "message": "Register company request submitted on the Network"
}
```

POST ∨ localhost:4000/registerCompany **Send** ∨

Params   Authorization   Headers (8)   Body ●   Pre-request Script   Tests   Settings   Cookies

Query Params

KEY	VALUE	DESCRIPTION	ooo	Bulk Edit
Key	Value	Description		

Body   Cookies   Headers (7)   Test Results   Status: 200 OK   Time: 3.36 s   Size: 520 B   Save Response ∨

Pretty   Raw   Preview   Visualize   JSON ∨

```json
{
    "data": [
        "companyID":"org.pharma-network.com.pharmanet.companyDIST001VG Pharma",
        "name": "VG Pharma",
        "location": "Vizag",
        "organisationRole": "Distributor",
        "hierarchyKey": 2
    },
    "status": "success",
    "message": "Register company request submitted on the Network"
}
```

- For Adding a Purchase order to the Network:
    - Go to package.json file inside the chaincode folder and change script for start-dev and change peer.address to peer0.distributor.pharma-network.com:9053.
    - Go to the terminal where dev chaincode is running press ctrl + c, and run the command "npm run start-dev" and start chaincode container pointing to distributor peer.

- For Creating the Shipment order to the Network:
  - Go to the package.json file inside the chaincode folder and change script for start-dev and change the peer.address to peer0.manufacturer.pharma-network.com:7053.
  - Go to the terminal where the dev chaincode is running, press ctrl + c, and run the command "npm run start-dev" and start the chaincode container pointing to the manufacturer peer.
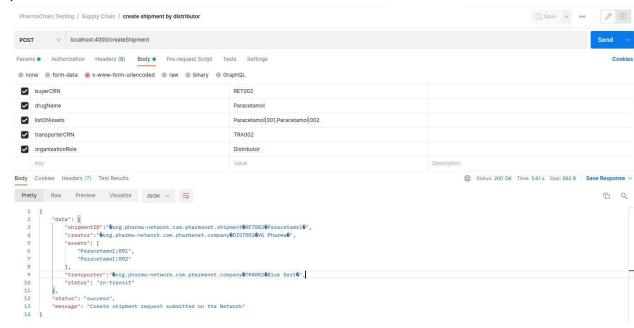
- For Updating Shipment upon delivery
  - Go to the package.json file inside the chaincode folder and change the script for start-dev and change peer.address to peer0.transporter.pharma-network.com:15053.
  - Go to the terminal where the dev chaincode is running, press ctrl + c, and run the command "npm run start-dev" and start the chaincode container pointing to the transporter peer.
  - Update shipment in response to shipment created by the Manufacturer. This will be called when assets are delivered. Check in response that status is changed to delivered.

- To create a new Purchase order from Retailer run the following commands
  - Go to the package.json file inside the chaincode folder and change the script for start-dev and change peer.address to peer0.retailer.pharma-network.com:11053.
  - Go to the terminal where the dev chaincode is running press ctrl + c, and run the command "npm run start-dev" and start chaincode container pointing to retailer peer.
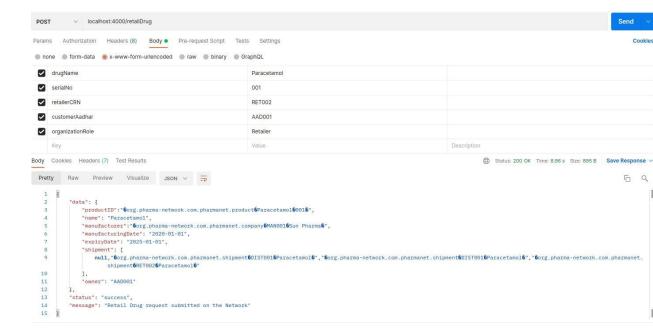
POST | localhost:4000/createPurchaseOrder | **Send**

Params   Authorization   Headers (8)   Body ●   Pre-request Script   Tests   Settings   Cookies

○ none   ○ form-data   ● x-www-form-urlencoded   ○ raw   ○ binary   ○ GraphQL

☑	buyerCRN	RET002	
☑	sellerCRN	DIST001	
☐ ☑	drugName	Paracetamol	✕
☑	quantity	2	
☑	organizationRole	Retailer	
	Key	Value	Description

Body   Cookies   Headers (7)   Test Results   Status: 200 OK   Time: 3.11 s   Size: 697 B   Save Response ∨

Pretty   Raw   Preview   Visualize   JSON ∨

```
 1  {
 2      "data": {
 3          "poID":"?org.pharma-network.com.pharmanet.purchaseOrder?RET002?Paracetamol?",
 4          "drugName": "Paracetamol",
 5          "quantity": "2",
 6          "buyer":"?org.pharma-network.com.pharmanet.company?RET002?upgrad?",
 7          "seller":"?org.pharma-network.com.pharmanet.company?DIST001?VG Pharma?",
 8          "createdAt": "2021-09-05T11:58:06.727Z"
 9      },
10      "status": "success",
11      "message": "Create purchase order request submitted on the Network"
12  }
```

● To create a shipment in response to Purchase Order from Retailer run the following commands
  ○ Go to the package.json file inside the chaincode folder and change the script for start-dev and change peer.address to peer0.retailer.pharma-network.com:11053.
  ○ Go to the terminal where the dev chaincode is running, press ctrl + c, and run the command "npm run start-dev" and start chaincode container pointing to retailer peer.

POST | localhost:4000/createShipment | **Send**

Params ●   Authorization   Headers (8)   Body ●   Pre-request Script   Tests   Settings   Cookies

○ none   ○ form-data   ● x-www-form-urlencoded   ○ raw   ○ binary   ○ GraphQL

☑	buyerCRN	RET002	
☑	drugName	Paracetamol	
☑	listOfAssets	Paracetamol|001,Paracetamol|002	
☑	transporterCRN	TRA002	
☑	organizationRole	Distributor	
	Key	Value	Description

Body   Cookies   Headers (7)   Test Results   Status: 200 OK   Time: 5.61 s   Size: 692 B   Save Response ∨

Pretty   Raw   Preview   Visualize   JSON ∨

```
 1  {
 2      "data": {
 3          "shipmentID":"?org.pharma-network.com.pharmanet.shipment?RET002?Paracetamol?",
 4          "creator":"?org.pharma-network.com.pharmanet.company?DIST001?VG Pharma?",
 5          "assets": [
 6              "Paracetamol|001",
 7              "Paracetamol|002"
 8          ],
 9          "transporter":"?org.pharma-network.com.pharmanet.company?TRA002?Blue Dart?",
10          "status": "in-transit"
11      },
12      "status": "success",
13      "message": "Create shipment request submitted on the Network"
14  }
```
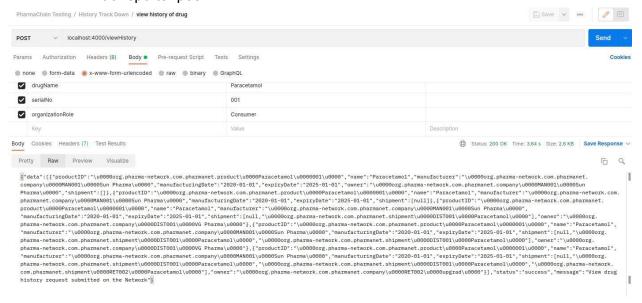
- To Update Shipment to delivery follow the steps:
  - Go to the package.json file inside the chaincode folder and change the script for start-dev and change peer.address to peer0.transporter.pharma-network.com:15053.
  - Go to the terminal where the dev chaincode is running, press ctrl + c, and run the command "npm run start-dev" and start the chaincode container pointing to the transporter peer.
  - Update shipment in response to shipment created by Distributor. This will be called when assets are delivered. Check in response that status is changed to delivered.

- To Purchase Drug from Retailer as a consumer follow the below steps:
  - Go to the package.json file inside the chaincode folder and change the script for start-dev and change peer.address to peer0.retailer.pharma-network.com:11053.
  - Go to the terminal where the dev chaincode is running press ctrl + c, and run the command "npm run start-dev" and start chaincode container pointing to retailer peer.
  - Buy drugs from retailer. This will be called by the retailer and pass aadhar Id of the consumer buying the drug.

- To get the history of a drug follow the below steps:
  - Go to the package.json file inside the chaincode folder and change the script for start-dev and change peer.address to peer0.consumer.pharma-network.com:13053.
  - Go to the terminal where the dev chaincode is running, press ctrl + c, and run the command "npm run start-dev" and start the chaincode container pointing to the transporter peer.

- To view current state of drug

POST ∨ | localhost:4000/viewDrugCurrentState

Send ∨

Params | Authorization | Headers (8) | Body ● | Pre-request Script | Tests | Settings

Cookies

Query Params

KEY	VALUE	DESCRIPTION		Bulk Edit
Key	Value	Description	ooo	

Body | Cookies | Headers (7) | Test Results

Status: **200 OK** Time: **3.41 s** Size: **893 B** Save Response ∨

Pretty | Raw | Preview | Visualize | JSON ∨

```json
1  {
2      "data": {
3          "productID":"￼org.pharma-network.com.pharmanet.product￼Paracetamol￼001￼",
4          "name": "Paracetamol",
5          "manufacturer":"￼org.pharma-network.com.pharmanet.company￼MAN001￼Sun Pharma￼",
6          "manufacturingDate": "2020-01-01",
7          "expiryDate": "2025-01-01",
8          "shipment": [
9              null,"￼org.pharma-network.com.pharmanet.shipment￼DIST001￼Paracetamol￼","￼org.pharma-network.com.pharmanet.shipment￼DIST001￼Paracetamol￼","￼org.pharma-network.com.pharmanet.
                 shipment￼RET002￼Paracetamol￼"
10         ],
11         "owner": "AAD001"
12     },
13     "status": "success",
14     "message": "View drug request submitted on the Network"
15  }
```