Commands to bring up and run the Pharma-Network

Prerequisite
Go to chaincode folder and run the below command

Command
cd chaincode

npm install

➢ This command installs the node modules needed for the chaincode

Starting the Network

1. Go to the Network folder and start the network by running the below command.

Command
./fabricNetwork.sh up

➢ This command generates crypto materials
➢ It generates config materials
➢ Starts the docker containers
➢ Create channel
➢ Join peers in the channel
➢ Update anchor peers

Generate crypto materials


```
rakesh@rakesh-VirtualBox:~/workspace/pharma-net/Network$ ./fabricNetwork.sh up
Starting for channel 'pharmachannel' with CLI timeout of '15' seconds and CLI delay of '5' seconds and chaincode version '1.1'
Continue? [Y/n] y
proceeding ...
LOCAL_VERSION=1.4.3
DOCKER_IMAGE_VERSION=1.4.3
/home/rakesh/workspace/pharma-net/Network/bin/cryptogen

##########################################################
##### Generate certificates using cryptogen tool #########
##########################################################
+ cryptogen generate --config=./crypto-config.yaml
manufacturer.pharma-network.com
distributor.pharma-network.com
retailer.pharma-network.com
transporter.pharma-network.com
consumer.pharma-network.com
+ res=0
+ set +x


/home/rakesh/workspace/pharma-net/Network/bin/configtxgen
##########################################################
#########  Generating Orderer Genesis block #############
##########################################################
+ configtxgen -profile OrdererGenesis -channelID pharma-sys-channel -outputBlock ./channel-artifacts/genesis.block
2022-08-11 21:02:53.449 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2022-08-11 21:02:53.490 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 002 orderer type: solo
2022-08-11 21:02:53.490 IST [common.tools.configtxgen.localconfig] Load -> INFO 003 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.500 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 004 orderer type: solo
2022-08-11 21:02:53.500 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 005 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.522 IST [common.tools.configtxgen] doOutputBlock -> INFO 006 Generating genesis block
2022-08-11 21:02:53.522 IST [common.tools.configtxgen] doOutputBlock -> INFO 007 Writing genesis block
+ res=0
+ set +x


##############################################################
### Generating channel configuration transaction 'channel.tx' ###
##############################################################
+ configtxgen -profile PharmaChannel -outputCreateChannelTx ./channel-artifacts/channel.tx -channelID pharmachannel
2022-08-11 21:02:53.548 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2022-08-11 21:02:53.561 IST [common.tools.configtxgen.localconfig] Load -> INFO 002 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.571 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 003 orderer type: solo
2022-08-11 21:02:53.571 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 004 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.571 IST [common.tools.configtxgen] doOutputChannelCreateTx -> INFO 005 Generating new channel configtx
2022-08-11 21:02:53.571 IST [common.tools.configtxgen.encoder] NewChannelGroup -> WARN 006 Default policy emission is deprecated, please include policy specifications for the channel group in configtx.yaml
2022-08-11 21:02:53.575 IST [common.tools.configtxgen.encoder] NewChannelGroup -> WARN 007 Default policy emission is deprecated, please include policy specifications for the channel group in configtx.yaml
```

Generate Config

```
2022-08-11 21:02:53.596 IST [common.tools.configtxgen] doOutputChannelCreateTx -> INFO 008 Writing new channel tx
+ res=0
+ set +x


############################################################
### Generating anchor peer update for ManufacturerMSP    #########
############################################################
+ configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/ManufacturerMSPanchors.tx -channelID pharmachannel -asOrg ManufacturerMSP
2022-08-11 21:02:53.627 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2022-08-11 21:02:53.638 IST [common.tools.configtxgen.localconfig] Load -> INFO 002 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.649 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 003 orderer type: solo
2022-08-11 21:02:53.649 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 004 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.649 IST [common.tools.configtxgen] doOutputAnchorPeersUpdate -> INFO 005 Generating anchor peer update
2022-08-11 21:02:53.649 IST [common.tools.configtxgen] doOutputAnchorPeersUpdate -> INFO 006 Writing anchor peer update
+ res=0
+ set +x


############################################################
### Generating anchor peer update for DistributorMSP     #########
############################################################
+ configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/DistributorMSPanchors.tx -channelID pharmachannel -asOrg DistributorMSP
2022-08-11 21:02:53.679 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2022-08-11 21:02:53.689 IST [common.tools.configtxgen.localconfig] Load -> INFO 002 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.701 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 003 orderer type: solo
2022-08-11 21:02:53.701 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 004 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.701 IST [common.tools.configtxgen] doOutputAnchorPeersUpdate -> INFO 005 Generating anchor peer update
2022-08-11 21:02:53.701 IST [common.tools.configtxgen] doOutputAnchorPeersUpdate -> INFO 006 Writing anchor peer update
+ res=0
+ set +x


############################################################
#####  Generating anchor peer update for RetailerMSP   #########
############################################################
+ configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/RetailerMSPanchors.tx -channelID pharmachannel -asOrg RetailerMSP
2022-08-11 21:02:53.724 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2022-08-11 21:02:53.737 IST [common.tools.configtxgen.localconfig] Load -> INFO 002 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.759 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 003 orderer type: solo
2022-08-11 21:02:53.759 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 004 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.759 IST [common.tools.configtxgen] doOutputAnchorPeersUpdate -> INFO 005 Generating anchor peer update
2022-08-11 21:02:53.759 IST [common.tools.configtxgen] doOutputAnchorPeersUpdate -> INFO 006 Writing anchor peer update
+ res=0
+ set +x


############################################################
###  Generating anchor peer update for TransporterMSP   #########
############################################################
```

```
###########################################################
+ configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/TransporterMSPanchors.tx -channelID pharmachannel -asOrg TransporterMSP
2022-08-11 21:02:53.794 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2022-08-11 21:02:53.804 IST [common.tools.configtxgen.localconfig] Load -> INFO 002 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.815 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 003 orderer type: solo
2022-08-11 21:02:53.815 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 004 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.815 IST [common.tools.configtxgen] doOutputAnchorPeersUpdate -> INFO 005 Generating anchor peer update
2022-08-11 21:02:53.815 IST [common.tools.configtxgen] doOutputAnchorPeersUpdate -> INFO 006 Writing anchor peer update
+ res=0
+ set +x


###########################################################
######  Generating anchor peer update for ConsumerMSP   #########
###########################################################
+ configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/ConsumerMSPanchors.tx -channelID pharmachannel -asOrg ConsumerMSP
2022-08-11 21:02:53.844 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2022-08-11 21:02:53.859 IST [common.tools.configtxgen.localconfig] Load -> INFO 002 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.879 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 003 orderer type: solo
2022-08-11 21:02:53.879 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 004 Loaded configuration: /home/rakesh/workspace/pharma-net/Network/configtx.yaml
2022-08-11 21:02:53.879 IST [common.tools.configtxgen] doOutputAnchorPeersUpdate -> INFO 005 Generating anchor peer update
2022-08-11 21:02:53.879 IST [common.tools.configtxgen] doOutputAnchorPeersUpdate -> INFO 006 Writing anchor peer update
+ res=0
+ set +x


Creating network "network_pharma" with the default driver
Creating volume "network_orderer.pharma-network.com" with default driver
Creating volume "network_peer0.manufacturer.pharma-network.com" with default driver
Creating volume "network_peer1.manufacturer.pharma-network.com" with default driver
Creating volume "network_peer0.distributor.pharma-network.com" with default driver
Creating volume "network_peer1.distributor.pharma-network.com" with default driver
Creating volume "network_peer0.retailer.pharma-network.com" with default driver
Creating volume "network_peer1.retailer.pharma-network.com" with default driver
Creating volume "network_peer0.transporter.pharma-network.com" with default driver
Creating volume "network_peer1.transporter.pharma-network.com" with default driver
Creating volume "network_peer0.consumer.pharma-network.com" with default driver
Creating volume "network_peer1.consumer.pharma-network.com" with default driver
Creating chaincode                           ... done
Creating peer0.transporter.pharma-network.com  ... done
Creating peer1.manufacturer.pharma-network.com ... done
Creating ca.manufacturer.pharma-network.com    ... done
Creating ca.consumer.pharma-network.com        ... done
Creating peer1.retailer.pharma-network.com     ... done
Creating ca.retailer.pharma-network.com        ... done
Creating peer0.manufacturer.pharma-network.com ... done
Creating orderer.pharma-network.com            ... done
Creating peer0.retailer.pharma-network.com     ... done
Creating peer1.consumer.pharma-network.com     ... done
```

Start the docker containers

```
Creating ca.transporter.pharma-network.com      ... done
Creating peer0.consumer.pharma-network.com      ... done
Creating peer1.transporter.pharma-network.com   ... done
Creating peer1.distributor.pharma-network.com   ... done
Creating ca.distributor.pharma-network.com      ... done
Creating peer0.distributor.pharma-network.com   ... done
Creating cli                                    ... done
CONTAINER ID   IMAGE                         COMMAND              CREATED         STATUS                PORTS
           NAMES
b3eef90a0373   hyperledger/fabric-tools:latest    "/bin/bash"          4 seconds ago   Up Less than a second
           cli
697421f13dea   hyperledger/fabric-peer:latest     "peer node start"    13 seconds ago  Up 6 seconds          0.0.0.0:9051->9051/tcp, :::9051->9051/tcp, 0.0.0.0:9053->9053/tcp, :::9053->9053/tcp
           peer0.distributor.pharma-network.com
2e52f8ef5415   hyperledger/fabric-ca:1.5.3        "sh -c 'fabric-ca-se…"  13 seconds ago  Up 5 seconds          0.0.0.0:8054->7054/tcp, :::8054->7054/tcp
           ca.distributor.pharma-network.com
74fa0c5f295c   hyperledger/fabric-peer:latest     "peer node start"    13 seconds ago  Up 6 seconds          0.0.0.0:14051->14051/tcp, :::14051->14051/tcp, 0.0.0.0:14053->14053/tcp, :::14053->140
53/tcp    peer1.transporter.pharma-network.com
8dc4a648effb   hyperledger/fabric-peer:latest     "peer node start"    13 seconds ago  Up 6 seconds          0.0.0.0:10051->10051/tcp, :::10051->10051/tcp, 0.0.0.0:10053->10053/tcp, :::10053->100
53/tcp    peer1.distributor.pharma-network.com
35c3d1b2f744   hyperledger/fabric-peer:latest     "peer node start"    13 seconds ago  Up 4 seconds          0.0.0.0:16051->16051/tcp, :::16051->16051/tcp, 0.0.0.0:16053->16053/tcp, :::16053->160
53/tcp    peer1.consumer.pharma-network.com
2342f5d7b8c7   hyperledger/fabric-ca:1.5.3        "sh -c 'fabric-ca-se…"  13 seconds ago  Up 7 seconds          0.0.0.0:10054->7054/tcp, :::10054->7054/tcp
           ca.transporter.pharma-network.com
46adfc7bdb22   hyperledger/fabric-peer:latest     "peer node start"    13 seconds ago  Up 8 seconds          0.0.0.0:11051->11051/tcp, :::11051->11051/tcp, 0.0.0.0:11053->11053/tcp, :::11053->110
53/tcp    peer0.retailer.pharma-network.com
63bce5ac1a34   hyperledger/fabric-peer:latest     "peer node start"    13 seconds ago  Up 4 seconds          0.0.0.0:15051->15051/tcp, :::15051->15051/tcp, 0.0.0.0:15053->15053/tcp, :::15053->150
53/tcp    peer0.consumer.pharma-network.com
3869e8105486   hyperledger/fabric-orderer:latest  "orderer"            13 seconds ago  Up 5 seconds          0.0.0.0:7050->7050/tcp, :::7050->7050/tcp
           orderer.pharma-network.com
022dbc9c56c0   hyperledger/fabric-ca:1.5.3        "sh -c 'fabric-ca-se…"  13 seconds ago  Up 7 seconds          0.0.0.0:9054->7054/tcp, :::9054->7054/tcp
           ca.retailer.pharma-network.com
99edefcd09a1   hyperledger/fabric-peer:latest     "peer node start"    13 seconds ago  Up 5 seconds          0.0.0.0:7051->7051/tcp, :::7051->7051/tcp, 0.0.0.0:7053->7053/tcp, :::7053->7053/tcp
           peer0.manufacturer.pharma-network.com
bcaef344df34   hyperledger/fabric-peer:latest     "peer node start"    13 seconds ago  Up 8 seconds          0.0.0.0:12051->12051/tcp, :::12051->12051/tcp, 0.0.0.0:12053->12053/tcp, :::12053->120
53/tcp    peer1.retailer.pharma-network.com
439e0d8457c7   hyperledger/fabric-ca:1.5.3        "sh -c 'fabric-ca-se…"  13 seconds ago  Up 6 seconds          0.0.0.0:11054->7054/tcp, :::11054->7054/tcp
           ca.consumer.pharma-network.com
50be3cf2cd79   hyperledger/fabric-peer:latest     "peer node start"    13 seconds ago  Up 5 seconds          0.0.0.0:8051->8051/tcp, :::8051->8051/tcp, 0.0.0.0:8053->8053/tcp, :::8053->8053/tcp
           peer1.manufacturer.pharma-network.com
d9ac4aa41bf8   hyperledger/fabric-ca:1.5.3        "sh -c 'fabric-ca-se…"  13 seconds ago  Up 4 seconds          0.0.0.0:7054->7054/tcp, :::7054->7054/tcp
           ca.manufacturer.pharma-network.com
ccfc8a169ef0   hyperledger/fabric-peer:latest     "peer node start"    13 seconds ago  Up 8 seconds          0.0.0.0:13051->13051/tcp, :::13051->13051/tcp, 0.0.0.0:13053->13053/tcp, :::13053->130
53/tcp    peer0.transporter.pharma-network.com
8f846d1f2329   hyperledger/fabric-ccenv:latest    "/bin/bash -c 'sleep…"  13 seconds ago  Up 7 seconds
           chaincode
Sleeping 10s to allow cluster to complete booting
```

Create channel and join peers

```
rakesh@rakesh-VirtualBox: ~/workspace/pharma-net/Network

 _____ _____    _    ____ _____
/ ____|_   _|  / \  |  _ \_   _|
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 ____) |_| |_/ /   \ \_| \_\| |
|_____/|_____/_/     \_\_|\_\|_|

Setting Up Hyperledger Fabric Network

Channel name : pharmachannel
Creating channel...
+ peer channel create -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/channel.tx
+ res=0
+ set +x
2022-08-11 15:33:19.365 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:33:19.496 UTC [cli.common] readBlock -> INFO 002 Received block: 0
===================== Channel 'pharmachannel' created =====================

Having all peers join the channel...
+ peer channel join -b pharmachannel.block
+ res=0
+ set +x
2022-08-11 15:33:19.596 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:33:19.686 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
===================== peer0.Manufacturer.pharma-network.com  joined channel 'pharmachannel' =====================

+ peer channel join -b pharmachannel.block
+ res=0
+ set +x
2022-08-11 15:33:24.730 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:33:24.858 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
===================== peer1.Manufacturer.pharma-network.com  joined channel 'pharmachannel' =====================

+ peer channel join -b pharmachannel.block
+ res=0
+ set +x
2022-08-11 15:33:29.906 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:33:29.967 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
===================== peer0.Distributor.pharma-network.com  joined channel 'pharmachannel' =====================

+ peer channel join -b pharmachannel.block
+ res=0
+ set +x
2022-08-11 15:33:35.065 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:33:35.124 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
===================== peer1.Distributor.pharma-network.com  joined channel 'pharmachannel' =====================

+ peer channel join -b pharmachannel.block
```

```
=================== peer1.Distributor.pharma-network.com  joined channel 'pharmachannel' ===================

+ peer channel join -b pharmachannel.block
+ res=0
+ set +x
2022-08-11 15:33:40.279 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:33:40.361 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
=================== peer0.Retailer.pharma-network.com  joined channel 'pharmachannel' ===================

+ peer channel join -b pharmachannel.block
+ res=0
+ set +x
2022-08-11 15:33:45.430 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:33:45.496 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
=================== peer1.Retailer.pharma-network.com  joined channel 'pharmachannel' ===================

+ peer channel join -b pharmachannel.block
+ res=0
+ set +x
2022-08-11 15:33:50.544 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:33:50.626 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
=================== peer0.Transporter.pharma-network.com  joined channel 'pharmachannel' ===================
+ peer channel join -b pharmachannel.block

+ res=0
+ set +x
2022-08-11 15:33:55.680 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:33:55.742 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
=================== peer1.Transporter.pharma-network.com  joined channel 'pharmachannel' ===================

+ peer channel join -b pharmachannel.block
+ res=0
+ set +x
2022-08-11 15:34:00.873 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:34:00.952 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
=================== peer0.Consumer.pharma-network.com  joined channel 'pharmachannel' ===================

+ peer channel join -b pharmachannel.block
+ res=0
+ set +x
2022-08-11 15:34:06.074 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:34:06.788 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
=================== peer1.Consumer.pharma-network.com  joined channel 'pharmachannel' ===================
```

File Machine View Input Devices Help

```
Updating anchor peers for MANUFACTURER...
+ peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/ManufacturerMSPanchors.tx
+ res=0
+ set +x
2022-08-11 15:34:11.885 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:34:11.895 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
==================== Anchor peers updated for org 'ManufacturerMSP' on channel 'pharmachannel' ====================

Updating anchor peers for DISTRIBUTOR...
+ peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/DistributorMSPanchors.tx
+ res=0
+ set +x
2022-08-11 15:34:16.954 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:34:16.973 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
==================== Anchor peers updated for org 'DistributorMSP' on channel 'pharmachannel' ====================

Updating anchor peers for RETAILER...
+ peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/RetailerMSPanchors.tx
+ res=0
+ set +x
2022-08-11 15:34:22.046 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:34:22.060 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
==================== Anchor peers updated for org 'RetailerMSP' on channel 'pharmachannel' ====================

Updating anchor peers for TRANSPORTER...
+ peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/TransporterMSPanchors.tx
+ res=0
+ set +x
2022-08-11 15:34:27.140 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:34:27.153 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
==================== Anchor peers updated for org 'TransporterMSP' on channel 'pharmachannel' ====================

Updating anchor peers for CONSUMER...
+ peer channel update -o orderer.pharma-network.com:7050 -c pharmachannel -f ./channel-artifacts/ConsumerMSPanchors.tx
+ res=0
+ set +x
2022-08-11 15:34:32.224 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2022-08-11 15:34:32.238 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
==================== Anchor peers updated for org 'ConsumerMSP' on channel 'pharmachannel' ====================


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


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rakesh@rakesh-VirtualBox:~/workspace/pharma-net/Network$
```

Install and instantiate chaincode

1. Install the chaincode by running the below command.

Command

./fabricNetwork.sh install

➢ This command installs the chaincode on all the peers in the network
➢ It instantiates the chaincode on peer0.manufacturer.pharma-network.com

Install the chaincode

```
rakesh@rakesh-VirtualBox:~/workspace/pharma-net/Network$ ./fabricNetwork.sh install
Installing chaincode for channel 'pharmachannel' with CLI timeout of '15' seconds and CLI delay of '5' seconds and chaincode version '1.1'
Continue? [Y/n] y
proceeding ...
LOCAL_VERSION=1.4.3
DOCKER_IMAGE_VERSION=1.4.3


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\___ \   | |  / _ \  | |_) |   | |
 ___) |  | | / ___ \ |  _ <    | |
|____/   |_|/_/   \_\|_| \_\   |_|


Deploying Chaincode PHARMANET On Pharma Network

Channel name : pharmachannel
Installing chaincode on peer0.manufacturer.pharma-network.com ...
+ peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2022-08-11 16:19:51.909 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:51.909 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2022-08-11 16:19:55.216 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
==================== Chaincode is installed on peer0.Manufacturer ====================

Installing chaincode on peer1.manufacturer.pharma-network.com ...
+ peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2022-08-11 16:19:55.268 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:55.268 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2022-08-11 16:19:55.372 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
==================== Chaincode is installed on peer1.Manufacturer ====================

Installing chaincode on peer0.distributor.pharma-network.com ...
+ peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2022-08-11 16:19:55.430 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:55.430 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2022-08-11 16:19:55.504 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
==================== Chaincode is installed on peer0.Distributor ====================

Installing chaincode on peer1.distributor.pharma-network.com ...
+ peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2022-08-11 16:19:55.565 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:55.565 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2022-08-11 16:19:55.654 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
==================== Chaincode is installed on peer1.Distributor ====================
```

```
Installing chaincode on peer0.retailer.pharma-network.com ...
+ peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2022-08-11 16:19:55.724 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:55.724 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2022-08-11 16:19:55.796 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
=================== Chaincode is installed on peer0.Retailer ===================

Installing chaincode on peer1.retailer.pharma-network.com ...
+ peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2022-08-11 16:19:55.874 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:55.874 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2022-08-11 16:19:55.940 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
=================== Chaincode is installed on peer1.Retailer ===================

Installing chaincode on peer0.transporter.pharma-network.com ...
+ peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2022-08-11 16:19:56.032 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:56.032 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2022-08-11 16:19:56.105 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
=================== Chaincode is installed on peer0.Transporter ===================

Installing chaincode on peer1.transporter.pharma-network.com ...
+ peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2022-08-11 16:19:56.165 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:56.166 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2022-08-11 16:19:56.238 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
=================== Chaincode is installed on peer1.Transporter ===================

Installing chaincode on peer0.consumer.pharma-network.com ...
+ peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2022-08-11 16:19:56.337 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:56.337 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2022-08-11 16:19:56.427 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
=================== Chaincode is installed on peer0.Consumer ===================

Installing chaincode on peer1.consumer.pharma-network.com ...
+ peer chaincode install -n pharmanet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2022-08-11 16:19:56.481 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:56.481 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2022-08-11 16:19:56.577 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
```

Instantiating chaincode

```
Instantiating chaincode on channel using peer0.manufacturer.pharma-network.com ...
+ 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'\'','\''TransporterMSP.member'\'','\''ConsumerMSP.member'\'')'
+ res=0
+ set +x
2022-08-11 16:19:56.666 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2022-08-11 16:19:56.666 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
===================== Chaincode is instantiated on peer0.Manufacturer on channel 'pharmachannel' =====================


========= All GOOD, Chaincode PHARMANET Is Now Installed & Instantiated On Pharma Network ===========


 _____ _ _  _____
|  ___| \ | | | |  _ \
| |_  |  \| | | | | | |
|  _| | |\  | | | |_| |
|_|   |_| \_| |_| |___/

rakesh@rakesh-VirtualBox:~/workspace/pharma-net/Network$
```

Navigate to Application folder

1. Navigate to application folder and install node packages

Command

cd ../Application/

npm install

➢ This command installs all the packages mentioned in the package.json file

File   Machine   View   Input   Devices   Help

```
rakesh@rakesh-VirtualBox:~/workspace/pharma-net/Network$ cd ../Application/
rakesh@rakesh-VirtualBox:~/workspace/pharma-net/Application$ npm install
npm WARN pharma_network@1.0.0 No repository field
```

Start the node server

1. Start the node server

Command
node index.js

➤ This command starts the node server at port 3000

Start the postman and run the collections

➤ Launch Postman
➤ Select collections and import the collections from test folder
➤ There are four collections in test folder
   o AddToWallet
   o Initiation
   o Supply Chain
   o History

AddToWallet collection

Run the AddToWallet collections first, so that the identity for each organisation is created

Run Again   + New Run   ↑ Export Results

+   ≡   ...

∨ AddToWallet   ☆ ...

   POST localhost:3000/addToWallet Manufactu...

   POST localhost:3000/addToWallet Distributor

   POST localhost:3000/addToWallet Retailer

   POST localhost:3000/addToWallet Transporter

   POST localhost:3000/addToWallet Consumer

> History

> Initiation

> Supply Chain

> test

All Tests   Passed (0)   Failed (0)   Skipped (0)

View Summary

Iteration 1   1

POST localhost:3000/addToWallet Manufacturer   localhost:3000/addToWallet   / localhost:3000/addToWallet Manufacturer   200 OK   32 ms   309 B

No tests in this request.

POST localhost:3000/addToWallet Distributor   localhost:3000/addToWallet   / localhost:3000/addToWallet Distributor   200 OK   9 ms   309 B

No tests in this request.

POST localhost:3000/addToWallet Retailer   localhost:3000/addToWallet   / localhost:3000/addToWallet Retailer   200 OK   8 ms   309 B

No tests in this request.

POST localhost:3000/addToWallet Transporter   localhost:3000/addToWallet   / localhost:3000/addToWallet Transporter   200 OK   11 ms   309 B

No tests in this request.

POST localhost:3000/addToWallet Consumer   localhost:3000/addToWallet   / localhost:3000/addToWallet Consumer   200 OK   9 ms   309 B

No tests in this request.

Test Case 1 - Initiation collection

Create a Manufacturer with the following details

Name: "Sun Pharma"
CRN Number: "MAN001"
Location: "Chennai"

Create a Transporter with the following details
Name: "FedEx"
CRN Number: "TRA001"
Location: "Delhi"

Create another Transporter with the following details
Name: "Blue Dart"
CRN Number: "TRA002"
Location: "Bangalore"

Initiation / **localhost:3000/registerCompany BlueDart**

POST | localhost:3000/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		
☑ organisationRole	Transporter		
☑ organisation	Transporter		
Key	Value	Description	

Body | Cookies | Headers (7) | Test Results

Status: 200 OK Time: 133 ms Size: 493 B Save Response ⌄

Pretty | Raw | Preview | Visualize | JSON ⌄

```
1  {
2      "status": "success",
3      "message": "Company Registered",
4      "company": {
5          "companyId":"\org.pharma-network.pharmanet.companyid\TRA002\Blue Dart\",
6          "name": "Blue Dart",
7          "location": "Bangalore",
8          "organisationRole": "Transporter",
9          "hierarchyKey": ""
10     }
11 }
```

Create a Distributor with the following details

Name: "VG Pharm"
CRN Number: "DIST001"
Location: "Vizag"

Initiation / **localhost:3000/registerCompany VGPharma**

| POST | localhost:3000/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	DIST001		
☑	companyName	VG Pharma		
☑	location	Vizag		
☑	organisationRole	Distributor		
☑	organisation	Distributor		
	Key	Value	Description	

Body Cookies Headers (7) Test Results   Status: 200 OK Time: 1 m 8.88 s Size: 491 B Save Response ⌄

Pretty Raw Preview Visualize JSON ⌄

```
 1  {
 2      "status": "success",
 3      "message": "Company Registered",
 4      "company": {
 5          "companyId":"\org.pharma-network.pharmanet.companyid\DIST001\VG Pharma\",
 6          "name": "VG Pharma",
 7          "location": "Vizag",
 8          "organisationRole": "Distributor",
 9          "hierarchyKey": "2"
10      }
11  }
```

Find and Replace Console   Cookies Capture requests Bootcamp Runner Trash

Create a Retailer with the following details
Name: "Upgrad"
CRN Number: "RET002"
Location: "Mumbai"

Initiation / localhost:3000/registerCompany Upgrad

Save

POST localhost:3000/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
☑	companyCRN	RET002	
☑	companyName	upgrad	
☑	location	Mumbai	
☑	organisationRole	Retailer	
☑	organisation	Retailer	
	Key	Value	Description

Body | Cookies | Headers (7) | Test Results

Status: 200 OK Time: 1 m 41.04 s Size: 482 B Save Response

Pretty | Raw | Preview | Visualize | JSON

```
1  {
2      "status": "success",
3      "message": "Company Registered",
4      "company": {
5          "companyId":"org.pharma-network.pharmanet.companyidRET002upgrad",
6          "name": "upgrad",
7          "location": "Mumbai",
8          "organisationRole": "Retailer",
9          "hierarchyKey": "3"
10     }
11 }
```

Sidebar
> AddToWallet
> History
∨ Initiation
  POST localhost:3000/registerCompan...
  POST localhost:3000/registerCompan...
  POST localhost:3000/registerCompan...
  POST localhost:3000/registerCompan...
  POST localhost:3000/registerCompan...
  POST localhost:3000/addDrug 001
  POST localhost:3000/addDrug 002
  POST localhost:3000/addDrug 003
  POST localhost:3000/addDrug 004
> Supply Chain
> test

Find and Replace | Console   Cookies | Capture requests | Bootcamp | Runner | Trash

Create 4 strips of a drug name 'Paracetamol' with serial number starting from '001' to '004'

No Environment

Collections

APIs

Environments

Mock Servers

Flows

Monitors

History

> AddToWallet
> History
∨ Initiation
   POST localhost:3000/registerCompan...
   POST localhost:3000/registerCompan...
   POST localhost:3000/registerCompan...
   POST localhost:3000/registerCompan...
   POST localhost:3000/registerCompan...
   POST localhost:3000/addDrug 001
   POST localhost:3000/addDrug 002
   POST localhost:3000/addDrug 003
   POST localhost:3000/addDrug 004
> Supply Chain
> test

Initiation / localhost:3000/addDrug 002

Save

POST   localhost:3000/addDrug   Send

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

Cookies

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

Bulk Edit

	KEY	VALUE	DESCRIPTION
☑	drugName	Paracetamol	
☑	serialNo	002	
☑	mfgDate	06082022	
☑	expDate	06082023	
☑	companyCRN	MAN001	
☑	organisation	Manufacturer	
	Key	Value	Description

Body   Cookies   Headers (7)   Test Results

Status: 200 OK   Time: 105 ms   Size: 664 B   Save Response

Pretty   Raw   Preview   Visualize   JSON

```
 1   {
 2       "status": "success",
 3       "message": "Drug added",
 4       "drug": {
 5           "productId":"org.pharma-network.pharmanet.productidParacetamol002",
 6           "name": "Paracetamol",
 7           "manufacturer":"org.pharma-network.pharmanet.companyidMAN001Sun Pharma",
 8           "manufacturingDate": "06082022",
 9           "expiryDate": "06082023",
10           "owner":"org.pharma-network.pharmanet.companyidMAN001Sun Pharma",
11           "shipment": ""
12       }
13   }
```

Collections

APIs

Environments

Mock Servers

Flows

History

+ ▽ ⋯

> AddToWallet
> History
⌄ Initiation
   POST localhost:3000/registerCompan...
   POST localhost:3000/registerCompan...
   POST localhost:3000/registerCompan...
   POST localhost:3000/registerCompan...
   POST localhost:3000/registerCompan...
   POST localhost:3000/addDrug 001
   POST localhost:3000/addDrug 002
   POST localhost:3000/addDrug 003
   POST localhost:3000/addDrug 004
> Supply Chain
> test

POST loc ● | POST loc ● | POST loc ● | POST loc ● | GET localh | POST localh | POST localh | POST localh | POST localh | POST localh | POST localh | POST localh | POS   + ⋯   No Environment ⌄

Initiation / localhost:3000/addDrug 003   Save ⌄ ⋯   ✎ ▭

| POST ⌄ | localhost:3000/addDrug | 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
☑	drugName	Paracetamol		
☑	serialNo	003		
☑	mfgDate	06082022		
☑	expDate	06082023		
☑	companyCRN	MAN001		
☑	organisation	Manufacturer		
	Key	Value	Description	

Body   Cookies   Headers (7)   Test Results   Status: 200 OK   Time: 115 ms   Size: 664 B   Save Response ⌄

Pretty   Raw   Preview   Visualize   JSON ⌄

```
 1  {
 2      "status": "success",
 3      "message": "Drug added",
 4      "drug": {
 5          "productId":"⍰org.pharma-network.pharmanet.productid⍰Paracetamol⍰003⍰",
 6          "name": "Paracetamol",
 7          "manufacturer":"⍰org.pharma-network.pharmanet.companyid⍰MAN001⍰Sun Pharma⍰",
 8          "manufacturingDate": "06082022",
 9          "expiryDate": "06082023",
10          "owner":"⍰org.pharma-network.pharmanet.companyid⍰MAN001⍰Sun Pharma⍰",
11          "shipment": ""
12  }
13
```

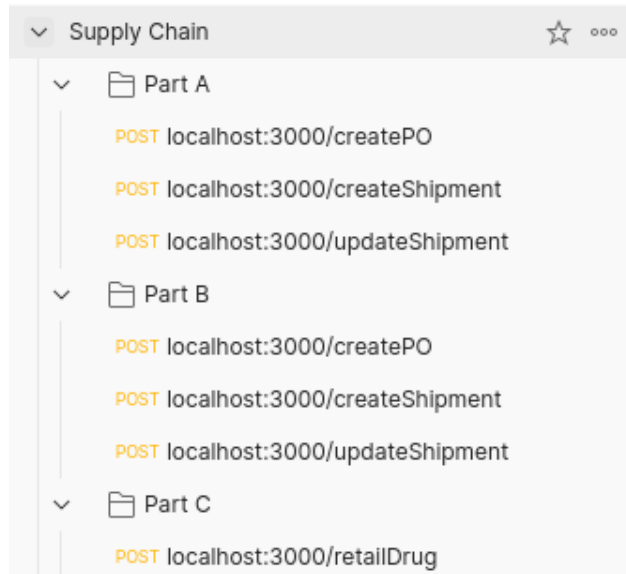Online   Find and Replace   Console   Cookies   Capture requests   Bootcamp   Runner   Trash

POST loc   POST loc   POST loc   POST loc   GET localh   POST localh   POST localh   POST localh   POST localh   POST localh   POST localh   POST localh   POST localh   POS   +   ⚬⚬⚬   No Environment

Collections

APIs

Environments

Mock Servers

Monitors

Flows

History

+   ⚬⚬⚬

> AddToWallet
> History
∨ Initiation
  POST localhost:3000/registerCompan...
  POST localhost:3000/registerCompan...
  POST localhost:3000/registerCompan...
  POST localhost:3000/registerCompan...
  POST localhost:3000/registerCompan...
  POST localhost:3000/addDrug 001
  POST localhost:3000/addDrug 002
  POST localhost:3000/addDrug 003
  POST localhost:3000/addDrug 004
> Supply Chain
> test

Initiation / localhost:3000/addDrug 004

Save   ⚬⚬⚬

| POST ∨ | localhost:3000/addDrug | 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
☑	drugName	Paracetamol		
☑	serialNo	004		
☑	mfgDate	06082022		
☑	expDate	06082023		
☑	companyCRN	MAN001		
☑	organisation	Manufacturer		
	Key	Value	Description	

Body   Cookies   Headers (7)   Test Results   Status: 200 OK   Time: 135 ms   Size: 664 B   Save Response ∨

Pretty   Raw   Preview   Visualize   JSON ∨

```
 1  {
 2      "status": "success",
 3      "message": "Drug added",
 4      "drug": {
 5          "productId":"\u0000org.pharma-network.pharmanet.productid\u0000Paracetamol\u0000004\u0000",
 6          "name": "Paracetamol",
 7          "manufacturer":"\u0000org.pharma-network.pharmanet.companyid\u0000MAN001\u0000Sun Pharma\u0000",
 8          "manufacturingDate": "06082022",
 9          "expiryDate": "06082023",
10          "owner":"\u0000org.pharma-network.pharmanet.companyid\u0000MAN001\u0000Sun Pharma\u0000",
11          "shipment": ""
12      }
13  }
```

Online   Find and Replace   Console   Cookies   Capture requests   Bootcamp   Runner   Trash

Create a collection file name 'Supply Chain' which contains the HTTP requests to perform the following functions

Purchase Order raised by 'VG Pharma' to purchase 3 strips of 'Paracetamol' from 'Sun Pharma'

Shipment created by 'Sun Pharma' in response to the raised purchase order. 'FedEx' acts as the Transporter

Supply Chain / Part A / **localhost:3000/createShipment**

Save

POST | localhost:3000/createShipment | 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
☑ buyerCRN	DIST001		
☑ drugName	Paracetamol		
☑ listOfAssets	001,002,003		
☑ transporterCRN	TRA001		
☑ organisation	Manufacturer		
Key	Value	Description	

Body | Cookies | Headers (7) | Test Results

Status: 200 OK   Time: 224 ms   Size: 856 B   Save Response

Pretty | Raw | Preview | Visualize | JSON

```
1  {
2      "status": "success",
3      "message": "Shipment created",
4      "shipment": {
5          "shipmentId":"❤org.pharma-network.pharmanet.shipmentid❤DIST001❤Paracetamol❤",
6          "creator":"❤org.pharma-network.pharmanet.companyid❤MAN001❤Sun Pharma❤",
7          "assets": ["❤org.pharma-network.pharmanet.productid❤Paracetamol❤001❤","❤org.pharma-network.pharmanet.productid❤Paracetamol❤002❤","❤org.pharma-network.pharmanet.
            productid❤Paracetamol❤003❤"
8          ],
9          "transporter":"❤org.pharma-network.pharmanet.companyid❤TRA001❤FedEx❤",
10         "status": "in-transit"
11     }
12  }
```

Sidebar tree:
- AddToWallet
- History
- Initiation
- Supply Chain
  - Part A
    - POST localhost:3000/createPO
    - POST localhost:3000/createShipment
    - POST localhost:3000/updateShipment
  - Part B
    - POST localhost:3000/createPO
    - POST localhost:3000/createShipment
    - POST localhost:3000/updateShipment
  - Part C
    - POST localhost:3000/retailDrug
- test

'FedEx' delivers the shipment to 'VG Pharma'

Supply Chain / Part A / localhost:3000/updateShipment

Save

POST | localhost:3000/updateShipment | 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
☑ buyerCRN	DIST001		
☑ drugName	Paracetamol		
☑ transporterCRN	TRA001		
☑ organisation	Transporter		
Key	Value	Description	

Sidebar tree:
- AddToWallet
- History
- Initiation
- Supply Chain
  - Part A
    - POST localhost:3000/createPO
    - POST localhost:3000/createShipment
    - POST localhost:3000/updateShipment
  - Part B
    - POST localhost:3000/createPO
    - POST localhost:3000/createShipment
    - POST localhost:3000/updateShipment
  - Part C
    - POST localhost:3000/retailDrug
- test

Body | Cookies | Headers (7) | Test Results   Status: 200 OK   Time: 149 ms   Size: 862 B   Save Response

Pretty | Raw | Preview | Visualize | JSON

```
 1  {
 2      "status": "success",
 3      "message": "Shipment updated",
 4      "updatedShipment": {
 5          "shipmentId":"org.pharma-network.pharmanet.shipmentid:DIST001:Paracetamol",
 6          "creator":"org.pharma-network.pharmanet.companyid:MAN001:Sun Pharma",
 7          "assets": ["org.pharma-network.pharmanet.productid:Paracetamol:001","org.pharma-network.pharmanet.productid:Paracetamol:002","org.pharma-network.pharmanet.
                productid:Paracetamol:003"
 8          ],
 9          "transporter":"org.pharma-network.pharmanet.companyid:TRA001:FedEx",
10          "status": "Delivered"
11      }
12  }
```

Part B

Purchase Order raised by 'Upgrad to purchase 2 strips of 'Paracetamol' from 'VG Pharma'

Shipment created by 'VG Pharma' in response to the raised purchase order. 'Blue Dart' acts as the Transporter

Supply Chain / Part B / **localhost:3000/createShipment**

Save

POST | localhost:3000/createShipment | 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
☑ buyerCRN	RET002	
☑ drugName	Paracetamol	
☑ listOfAssets	001,002	
☑ transporterCRN	TRA002	
☑ organisation	Manufacturer	
Key	Value	Description

Bulk Edit

Body   Cookies   Headers (7)   Test Results

Status: 200 OK   Time: 2.24 s   Size: 780 B   Cancel

Pretty   Raw   Preview   Visualize   JSON

```
 1  {
 2      "status": "success",
 3      "message": "Shipment created",
 4      "shipment": {
 5          "shipmentId":"⦿org.pharma-network.pharmanet.shipmentid⦿RET002⦿Paracetamol⦿",
 6          "creator":"⦿org.pharma-network.pharmanet.companyid⦿DIST001⦿VG Pharma⦿",
 7          "assets": ["⦿org.pharma-network.pharmanet.productid⦿Paracetamol⦿001⦿","⦿org.pharma-network.pharmanet.productid⦿Paracetamol⦿002⦿"
 8          ],
 9          "transporter":"⦿org.pharma-network.pharmanet.companyid⦿TRA002⦿Blue Dart⦿",
10          "status": "in-transit"
11      }
12  }
```

Sidebar:
- AddToWallet
- History
- Initiation
- Supply Chain
  - Part A
    - POST localhost:3000/createPO
    - POST localhost:3000/createShipment
    - POST localhost:3000/updateShipment
  - Part B
    - POST localhost:3000/createPO
    - POST localhost:3000/createShipment
    - POST localhost:3000/updateShipment
  - Part C
    - POST localhost:3000/retailDrug
- test

'Blue Dart' delivers the shipment to 'Upgrad'

Supply Chain / Part B / **localhost:3000/updateShipment**

Save

POST | localhost:3000/updateShipment | 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 Ed
☑	buyerCRN	RET002		
☑	drugName	Paracetamol		
☑	transporterCRN	TRA002		
☑	organisation	Transporter		
	Key	Value	Description	

Body Cookies Headers (7) Test Results

Status: 200 OK   Time: 73 ms   Size: 786 B   Save Response

Pretty Raw Preview Visualize JSON ∨

```
1   {
2       "status": "success",
3       "message": "Shipment updated",
4       "updatedShipment": {
5           "shipmentId":"org.pharma-network.pharmanet.shipmentidRET002Paracetamol",
6           "creator":"org.pharma-network.pharmanet.companyidDIST001VG Pharma",
7           "assets": ["org.pharma-network.pharmanet.productidParacetamol001","org.pharma-network.pharmanet.productidParacetamol002"
8           ],
9           "transporter":"org.pharma-network.pharmanet.companyidTRA002Blue Dart",
10          "status": "Delivered"
11      }
12  }
```

AddToWallet
History
Initiation
Supply Chain
  Part A
    POST localhost:3000/createPO
    POST localhost:3000/createShipment
    POST localhost:3000/updateShipment
  Part B
    POST localhost:3000/createPO
    POST localhost:3000/createShipment
    POST localhost:3000/updateShipment
  Part C
    POST localhost:3000/retailDrug
test

Part C

A Customer name 'Akash' with Aadhar number 'AAD001' buy 1 'Paracetamol' strip from the retailer 'Upgrad'

Save

| POST | localhost:3000/retailDrug | | 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
☑ drugName	Paracetamol		
☑ serialNo	001		
☑ retailerCRN	RET002		
☑ customerAadhar	AAD001		
☑ organisation	Retailer		
Key	Value	Description	

Body | Cookies | Headers (7) | Test Results · Status: 200 OK · Time: 94 ms · Size: 687 B · Save Response

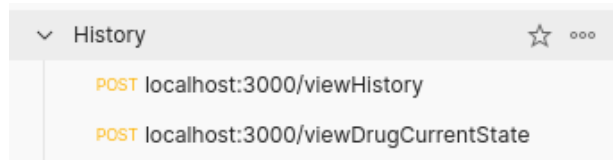Pretty | Raw | Preview | Visualize | JSON

```
 1  {
 2      "status": "success",
 3      "message": "Drug sold to consumer",
 4      "drugSold": {
 5          "productId":"⦿org.pharma-network.pharmanet.productid⦿Paracetamol⦿001⦿",
 6          "name": "Paracetamol",
 7          "manufacturer":"⦿org.pharma-network.pharmanet.companyid⦿MAN001⦿Sun Pharma⦿",
 8          "manufacturingDate": "06082022",
 9          "expiryDate": "06082023",
10          "owner": "AAD001",
11          "shipment":"⦿org.pharma-network.pharmanet.shipmentid⦿RET002⦿Paracetamol⦿"
12      }
13  }
```

Create a collection file name 'History' which contains the HTTP requests to perform the following functions

The Customer 'Akash' wishes to check the history of the 'Paracetamol' that he brought from 'Upgrad'

```
19              "manufacturingDate": "06082022",
20              "expiryDate": "06082023",
21              "owner":"␀org.pharma-network.pharmanet.companyid␀MAN001␀Sun Pharma␀",
22              "shipment": ""
23            }
24          },
25          {
26            "TxId": "15242dc706ded5ee17984176a88c8b3166509aaa331ef8773d0a20a3f58768f8",
27            "Timestamp": {
28              "seconds": {
29                "low": 1660487986,
30                "high": 0,
31                "unsigned": false
32              },
33              "nanos": 178000000
34            },
35            "Value": {
36              "productId":"␀org.pharma-network.pharmanet.productid␀Paracetamol␀001␀",
37              "name": "Paracetamol",
38              "manufacturer":"␀org.pharma-network.pharmanet.companyid␀MAN001␀Sun Pharma␀",
39              "manufacturingDate": "06082022",
40              "expiryDate": "06082023",
41              "owner":"␀org.pharma-network.pharmanet.companyid␀TRA001␀FedEx␀",
42              "shipment": ""
43            }
44          },
45          {
46            "TxId": "3dc486fef862138218e19a81441fe77b9d7e61c30bcf4d2b2883c1ea26dd47dd",
47            "Timestamp": {
48              "seconds": {
49                "low": 1660488451,
50                "high": 0,
51                "unsigned": false
52              },
53              "nanos": 802000000
54            },
55            "Value": {
56              "productId":"␀org.pharma-network.pharmanet.productid␀Paracetamol␀001␀",
57              "name": "Paracetamol",
58              "manufacturer":"␀org.pharma-network.pharmanet.companyid␀MAN001␀Sun Pharma␀",
59              "manufacturingDate": "06082022",
60              "expiryDate": "06082023",
61              "owner":"␀org.pharma-network.pharmanet.companyid␀DIST001␀VG Pharma␀",
62              "shipment":"␀org.pharma-network.pharmanet.shipmentid␀DIST001␀Paracetamol␀"
63            }
64          },
65          {
66            "TxId": "478bfd2591b44eec3bbe7467f4f6398c8756eec981a7133a9b6af9a7933b730b",
67            "Timestamp": {
68              "seconds": {
69                "low": 1660488680,
70                "high": 0,
71                "unsigned": false
72              },
73              "nanos": 388000000
74            },
```

```
 75            "Value": {
 76                "productId":"⬢org.pharma-network.pharmanet.productid⬢Paracetamol⬢001⬢",
 77                "name": "Paracetamol",
 78                "manufacturer":"⬢org.pharma-network.pharmanet.companyid⬢MAN001⬢Sun Pharma⬢",
 79                "manufacturingDate": "06082022",
 80                "expiryDate": "06082023",
 81                "owner":"⬢org.pharma-network.pharmanet.companyid⬢TRA002⬢Blue Dart⬢",
 82                "shipment":"⬢org.pharma-network.pharmanet.shipmentid⬢DIST001⬢Paracetamol⬢"
 83            }
 84        },
 85        {
 86            "TxId": "8f5c66de294bf9def428098d16d9ee06a23619c738be9e01cc7542807d87aeb8",
 87            "Timestamp": {
 88                "seconds": {
 89                    "low": 1660488792,
 90                    "high": 0,
 91                    "unsigned": false
 92                },
 93                "nanos": 61000000
 94            },
 95            "Value": {
 96                "productId":"⬢org.pharma-network.pharmanet.productid⬢Paracetamol⬢001⬢",
 97                "name": "Paracetamol",
 98                "manufacturer":"⬢org.pharma-network.pharmanet.companyid⬢MAN001⬢Sun Pharma⬢",
 99                "manufacturingDate": "06082022",
100                "expiryDate": "06082023",
101                "owner":"⬢org.pharma-network.pharmanet.companyid⬢RET002⬢upgrad⬢",
102                "shipment":"⬢org.pharma-network.pharmanet.shipmentid⬢RET002⬢Paracetamol⬢"
```

```
 99                "manufacturingDate": "06082022",
100                "expiryDate": "06082023",
101                "owner":"⬢org.pharma-network.pharmanet.companyid⬢RET002⬢upgrad⬢",
102                "shipment":"⬢org.pharma-network.pharmanet.shipmentid⬢RET002⬢Paracetamol⬢"
103            }
104        },
105        {
106            "TxId": "426c6706cc8f5f20d7ecb8a47172eb52df69fa8e5d5c1a5f5865b8d4c37b9fe4",
107            "Timestamp": {
108                "seconds": {
109                    "low": 1660488987,
110                    "high": 0,
111                    "unsigned": false
112                },
113                "nanos": 142000000
114            },
115            "Value": {
116                "productId":"⬢org.pharma-network.pharmanet.productid⬢Paracetamol⬢001⬢",
117                "name": "Paracetamol",
118                "manufacturer":"⬢org.pharma-network.pharmanet.companyid⬢MAN001⬢Sun Pharma⬢",
119                "manufacturingDate": "06082022",
120                "expiryDate": "06082023",
121                "owner": "AAD001",
122                "shipment":"⬢org.pharma-network.pharmanet.shipmentid⬢RET002⬢Paracetamol⬢"
123            }
124        }
125    ]
126 }
```

The Customer 'Akash' wishes to check the current state of the 'Paracetamol' that he brought from 'Upgrad'

History / localhost:3000/viewDrugCurrentState

Save

- AddToWallet
- History
  - POST localhost:3000/viewHistory
  - POST localhost:3000/viewDrugCurrentState
- Initiation
- Supply Chain
- test

POST   localhost:3000/viewDrugCurrentState   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
☑ drugName	Paracetamol		
☑ serialNo	001		
☑ organisation	Consumer		
Key	Value	Description	

Body   Cookies   Headers (7)   Test Results   Status: 200 OK   Time: 64 ms   Size: 701 B   Save Response ⌄

Pretty   Raw   Preview   Visualize   JSON ⌄

```
 1  {
 2      "status": "success",
 3      "message": "Current state of drug displayed",
 4      "currentState": {
 5          "productId":"\u0000org.pharma-network.pharmanet.productid\u0000Paracetamol\u0000001\u0000",
 6          "name": "Paracetamol",
 7          "manufacturer":"\u0000org.pharma-network.pharmanet.companyid\u0000MAN001\u0000Sun Pharma\u0000",
 8          "manufacturingDate": "06082022",
 9          "expiryDate": "06082023",
10          "owner": "AAD001",
11          "shipment":"\u0000org.pharma-network.pharmanet.shipmentid\u0000RET002\u0000Paracetamol\u0000"
12      }
13  }
```