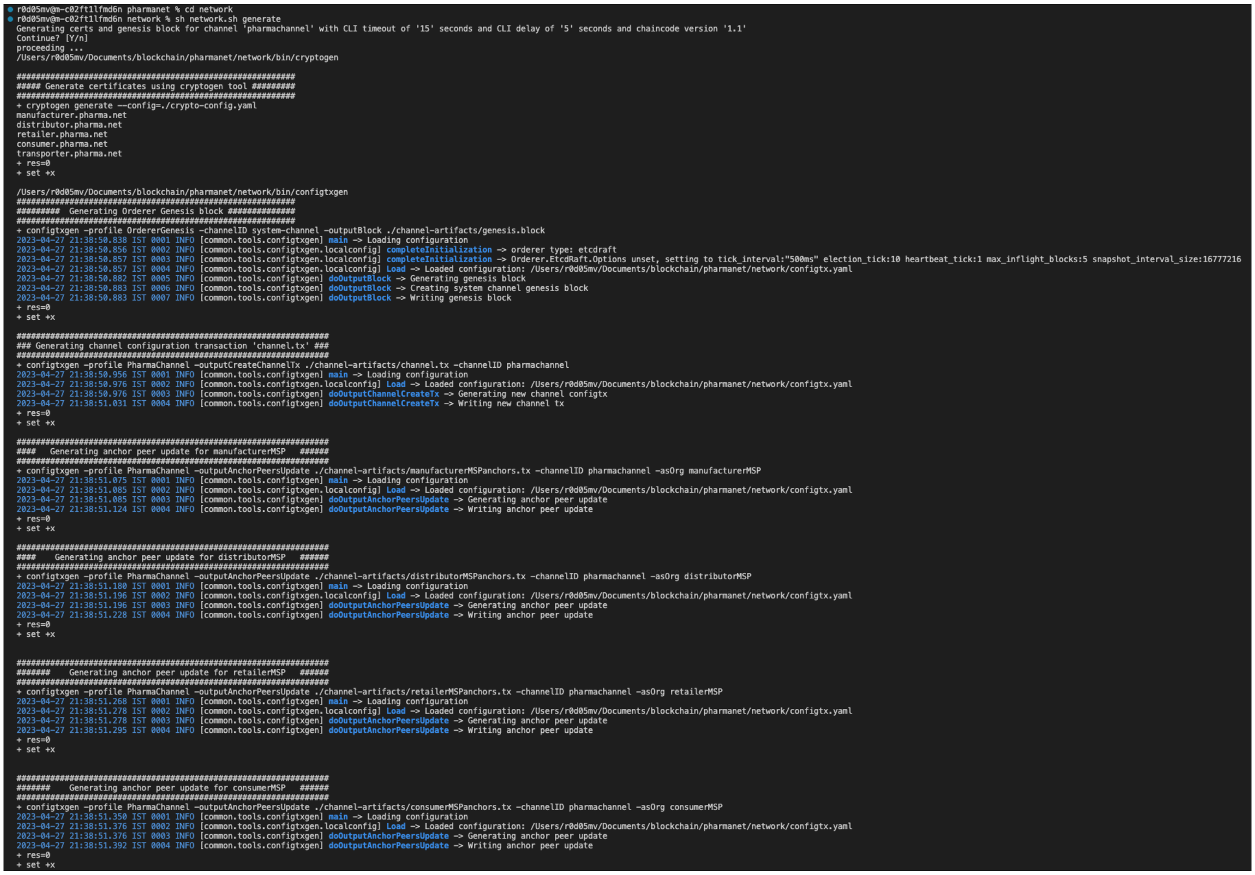
Instruction

Starting up blockchain network

Move to the network folder, and use the `network.sh` and generate crypto configs and channel artifacts.

```
cd network/
sh network.sh generate
```

Above command with generate crypto config, Genesis block file, channel creation transaction with directory `channel-artifacts` and `crypto-config` under network folder.



```
r0d05mv@m-c02ft1lfmd6n pharmanet % cd network
r0d05mv@m-c02ft1lfmd6n network % sh network.sh generate
Generating certs and genesis block for channel 'pharmachannel' with CLI timeout of '15' seconds and CLI delay of '5' seconds and chaincode version '1.1'
Continue? [Y/n]
proceeding ...
/Users/r0d05mv/Documents/blockchain/pharmanet/network/bin/cryptogen

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

/Users/r0d05mv/Documents/blockchain/pharmanet/network/bin/configtxgen
##########################################################
#########  Generating Orderer Genesis block ##############
##########################################################
+ configtxgen -profile OrdererGenesis -channelID system-channel -outputBlock ./channel-artifacts/genesis.block
2023-04-27 21:38:50.838 IST 0001 INFO [common.tools.configtxgen] main -> Loading configuration
2023-04-27 21:38:50.856 IST 0002 INFO [common.tools.configtxgen.localconfig] completeInitialization -> orderer type: etcdraft
2023-04-27 21:38:50.857 IST 0003 INFO [common.tools.configtxgen.localconfig] completeInitialization -> Orderer.EtcdRaft.Options unset, setting to tick_interval:"500ms" election_tick:10 heartbeat_tick:1 max_inflight_blocks:5 snapshot_interval_size:16777216
2023-04-27 21:38:50.857 IST 0004 INFO [common.tools.configtxgen.localconfig] Load -> Loaded configuration: /Users/r0d05mv/Documents/blockchain/pharmanet/network/configtx.yaml
2023-04-27 21:38:50.882 IST 0005 INFO [common.tools.configtxgen] doOutputBlock -> Generating genesis block
2023-04-27 21:38:50.883 IST 0006 INFO [common.tools.configtxgen] doOutputBlock -> Creating system channel genesis block
2023-04-27 21:38:50.883 IST 0007 INFO [common.tools.configtxgen] doOutputBlock -> Writing genesis block
+ res=0
+ set +x

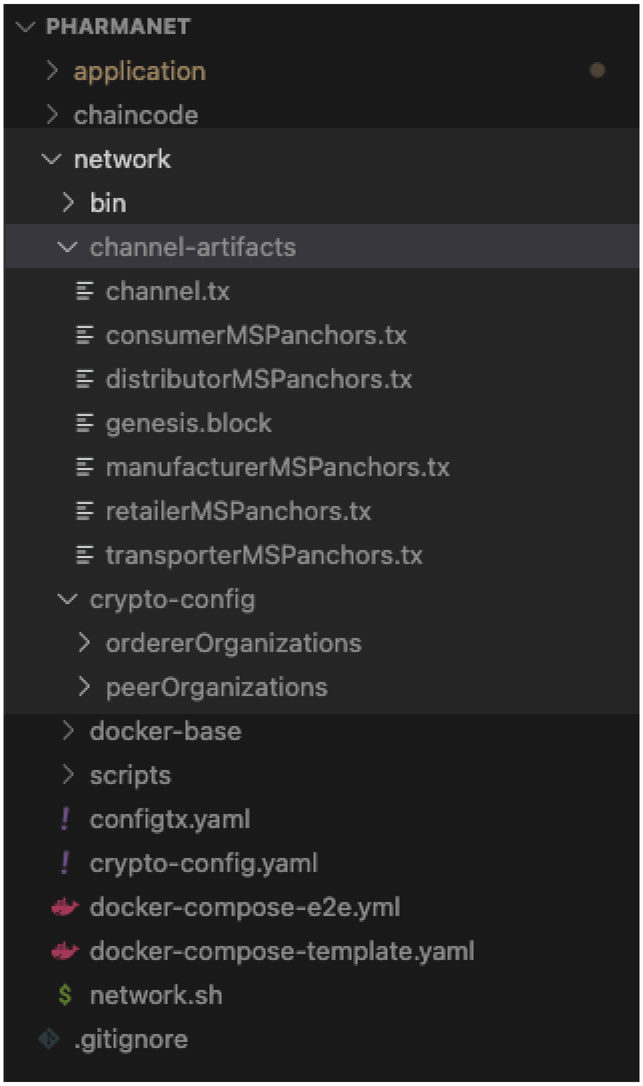
#################################################################
### Generating channel configuration transaction 'channel.tx' ###
#################################################################
+ configtxgen -profile PharmaChannel -outputCreateChannelTx ./channel-artifacts/channel.tx -channelID pharmachannel
2023-04-27 21:38:50.956 IST 0001 INFO [common.tools.configtxgen] main -> Loading configuration
2023-04-27 21:38:50.976 IST 0002 INFO [common.tools.configtxgen.localconfig] Load -> Loaded configuration: /Users/r0d05mv/Documents/blockchain/pharmanet/network/configtx.yaml
2023-04-27 21:38:50.976 IST 0003 INFO [common.tools.configtxgen] doOutputChannelCreateTx -> Generating new channel configtx
2023-04-27 21:38:51.031 IST 0004 INFO [common.tools.configtxgen] doOutputChannelCreateTx -> 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
2023-04-27 21:38:51.075 IST 0001 INFO [common.tools.configtxgen] main -> Loading configuration
2023-04-27 21:38:51.085 IST 0002 INFO [common.tools.configtxgen.localconfig] Load -> Loaded configuration: /Users/r0d05mv/Documents/blockchain/pharmanet/network/configtx.yaml
2023-04-27 21:38:51.085 IST 0003 INFO [common.tools.configtxgen] doOutputAnchorPeersUpdate -> Generating anchor peer update
2023-04-27 21:38:51.124 IST 0004 INFO [common.tools.configtxgen] doOutputAnchorPeersUpdate -> 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
2023-04-27 21:38:51.180 IST 0001 INFO [common.tools.configtxgen] main -> Loading configuration
2023-04-27 21:38:51.196 IST 0002 INFO [common.tools.configtxgen.localconfig] Load -> Loaded configuration: /Users/r0d05mv/Documents/blockchain/pharmanet/network/configtx.yaml
2023-04-27 21:38:51.196 IST 0003 INFO [common.tools.configtxgen] doOutputAnchorPeersUpdate -> Generating anchor peer update
2023-04-27 21:38:51.228 IST 0004 INFO [common.tools.configtxgen] doOutputAnchorPeersUpdate -> 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
2023-04-27 21:38:51.268 IST 0001 INFO [common.tools.configtxgen] main -> Loading configuration
2023-04-27 21:38:51.278 IST 0002 INFO [common.tools.configtxgen.localconfig] Load -> Loaded configuration: /Users/r0d05mv/Documents/blockchain/pharmanet/network/configtx.yaml
2023-04-27 21:38:51.278 IST 0003 INFO [common.tools.configtxgen] doOutputAnchorPeersUpdate -> Generating anchor peer update
2023-04-27 21:38:51.295 IST 0004 INFO [common.tools.configtxgen] doOutputAnchorPeersUpdate -> Writing anchor peer update
+ res=0
+ set +x

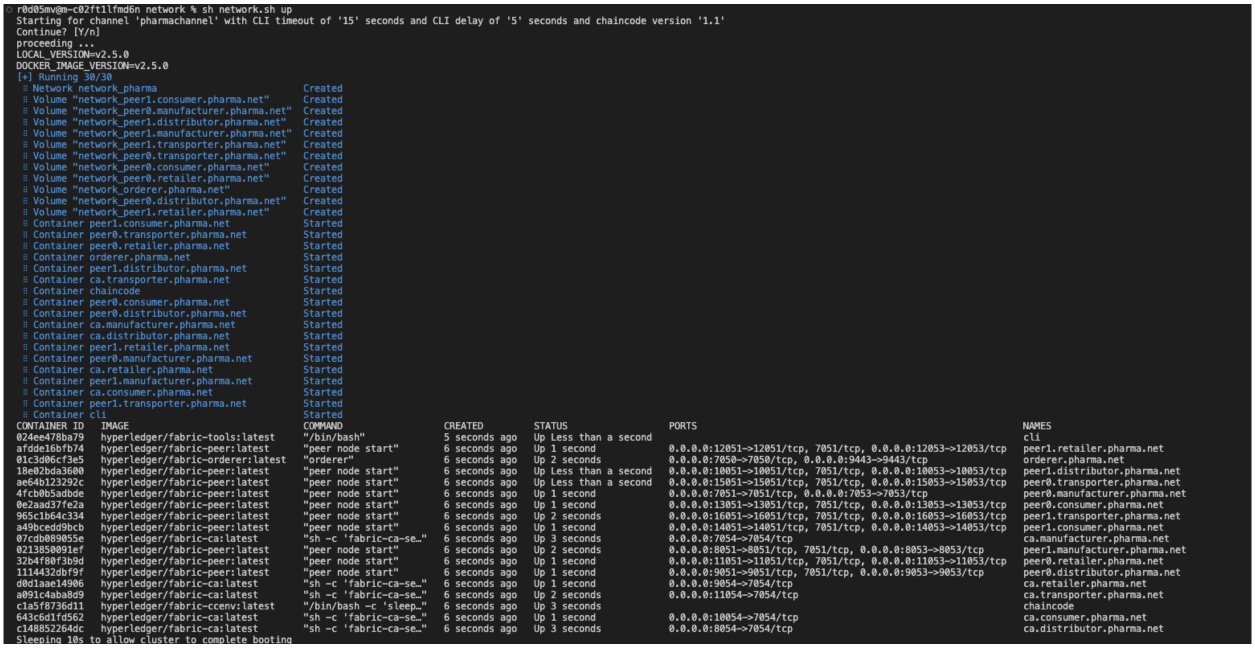

#################################################################
#######    Generating anchor peer update for consumerMSP   ######
#################################################################
+ configtxgen -profile PharmaChannel -outputAnchorPeersUpdate ./channel-artifacts/consumerMSPanchors.tx -channelID pharmachannel -asOrg consumerMSP
2023-04-27 21:38:51.350 IST 0001 INFO [common.tools.configtxgen] main -> Loading configuration
2023-04-27 21:38:51.376 IST 0002 INFO [common.tools.configtxgen.localconfig] Load -> Loaded configuration: /Users/r0d05mv/Documents/blockchain/pharmanet/network/configtx.yaml
2023-04-27 21:38:51.376 IST 0003 INFO [common.tools.configtxgen] doOutputAnchorPeersUpdate -> Generating anchor peer update
2023-04-27 21:38:51.392 IST 0004 INFO [common.tools.configtxgen] doOutputAnchorPeersUpdate -> Writing anchor peer update
+ res=0
+ set +x
```



```
PHARMANET
  application
  chaincode
  network
    bin
    channel-artifacts
      channel.tx
      consumerMSPanchors.tx
      distributorMSPanchors.tx
      genesis.block
      manufacturerMSPanchors.tx
      retailerMSPanchors.tx
      transporterMSPanchors.tx
    crypto-config
      ordererOrganizations
      peerOrganizations
    docker-base
    scripts
    configtx.yaml
    crypto-config.yaml
    docker-compose-e2e.yml
    docker-compose-template.yaml
    network.sh
  .gitignore
```

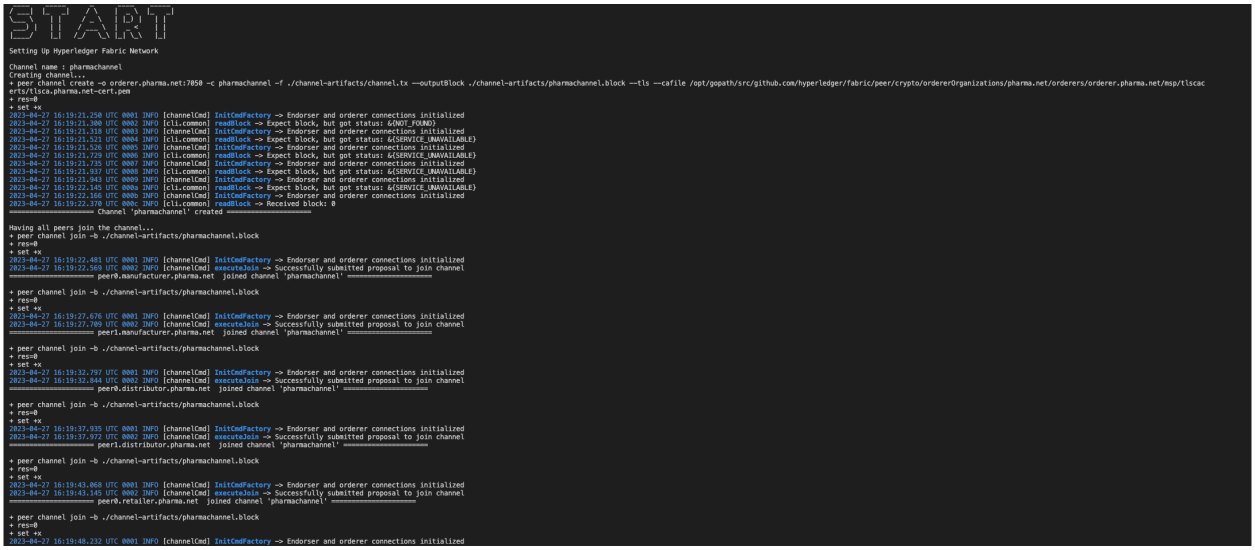
Next, We need to issue `up` command using the same script. Which will start the docker container far all the peers, using Docker Compose config, create a channel named `PharmaChannel` and make all the peers join the network. Once every peer joins the network, it will select the `peer0` of each organisation as the anchor peer. Make sure Docker daemon is running while issuing the below command:

```
sh network.sh up
```



```
○ r0d05mv@m-c02ft1lfmd6n network % sh network.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]
  proceeding ...
  LOCAL_VERSION=v2.5.0
  DOCKER_IMAGE_VERSION=v2.5.0
  [+] Running 30/30
   ⠿ Network network_pharma                      Created
   ⠿ Volume "network_peer1.consumer.pharma.net"      Created
   ⠿ Volume "network_peer0.manufacturer.pharma.net"  Created
   ⠿ Volume "network_peer1.distributor.pharma.net"   Created
   ⠿ Volume "network_peer1.manufacturer.pharma.net"  Created
   ⠿ Volume "network_peer1.transporter.pharma.net"   Created
   ⠿ Volume "network_peer0.transporter.pharma.net"   Created
   ⠿ Volume "network_peer0.consumer.pharma.net"      Created
   ⠿ Volume "network_peer0.retailer.pharma.net"      Created
   ⠿ Volume "network_orderer.pharma.net"             Created
   ⠿ Volume "network_peer0.distributor.pharma.net"   Created
   ⠿ Volume "network_peer1.retailer.pharma.net"      Created
   ⠿ Container peer1.consumer.pharma.net             Started
   ⠿ Container peer0.transporter.pharma.net          Started
   ⠿ Container peer0.retailer.pharma.net             Started
   ⠿ Container orderer.pharma.net                    Started
   ⠿ Container peer1.distributor.pharma.net          Started
   ⠿ Container ca.transporter.pharma.net             Started
   ⠿ Container chaincode                             Started
   ⠿ Container peer0.consumer.pharma.net             Started
   ⠿ Container peer0.distributor.pharma.net          Started
   ⠿ Container ca.manufacturer.pharma.net            Started
   ⠿ Container ca.distributor.pharma.net             Started
   ⠿ Container peer1.retailer.pharma.net             Started
   ⠿ Container peer0.manufacturer.pharma.net         Started
   ⠿ Container ca.retailer.pharma.net                Started
   ⠿ Container peer1.manufacturer.pharma.net         Started
   ⠿ Container ca.consumer.pharma.net                Started
   ⠿ Container peer1.transporter.pharma.net          Started
   ⠿ Container cli                                   Started
  CONTAINER ID   IMAGE                               COMMAND                  CREATED         STATUS                  PORTS                                                                   NAMES
  024ee478ba79   hyperledger/fabric-tools:latest     "/bin/bash"              5 seconds ago   Up Less than a second                                                                           cli
  afdde16bfb74   hyperledger/fabric-peer:latest      "peer node start"        6 seconds ago   Up 1 second             0.0.0.0:12051->12051/tcp, 7051/tcp, 0.0.0.0:12053->12053/tcp          peer1.retailer.pharma.net
  01c3d06cf3e5   hyperledger/fabric-orderer:latest   "orderer"                6 seconds ago   Up 2 seconds            0.0.0.0:7050->7050/tcp, 0.0.0.0:9443->9443/tcp                          orderer.pharma.net
  18e02bda3600   hyperledger/fabric-peer:latest      "peer node start"        6 seconds ago   Up Less than a second   0.0.0.0:10051->10051/tcp, 7051/tcp, 0.0.0.0:10053->10053/tcp          peer1.distributor.pharma.net
  ae64b123292c   hyperledger/fabric-peer:latest      "peer node start"        6 seconds ago   Up Less than a second   0.0.0.0:15051->15051/tcp, 7051/tcp, 0.0.0.0:15053->15053/tcp          peer0.transporter.pharma.net
  4fcb0b5adbde   hyperledger/fabric-peer:latest      "peer node start"        6 seconds ago   Up 1 second             0.0.0.0:7051->7051/tcp, 0.0.0.0:7053->7053/tcp                          peer0.manufacturer.pharma.net
  0e2aad37fe2a   hyperledger/fabric-peer:latest      "peer node start"        6 seconds ago   Up 1 second             0.0.0.0:13051->13051/tcp, 7051/tcp, 0.0.0.0:13053->13053/tcp          peer0.consumer.pharma.net
  965c1b64c334   hyperledger/fabric-peer:latest      "peer node start"        6 seconds ago   Up 2 seconds            0.0.0.0:16051->16051/tcp, 7051/tcp, 0.0.0.0:16053->16053/tcp          peer1.transporter.pharma.net
  a49bcedd9bcb   hyperledger/fabric-peer:latest      "peer node start"        6 seconds ago   Up 1 second             0.0.0.0:14051->14051/tcp, 7051/tcp, 0.0.0.0:14053->14053/tcp          peer1.consumer.pharma.net
  07cdb089055e   hyperledger/fabric-ca:latest        "sh -c 'fabric-ca-se…"   6 seconds ago   Up 3 seconds            0.0.0.0:7054->7054/tcp                                                  ca.manufacturer.pharma.net
  0213850091ef   hyperledger/fabric-peer:latest      "peer node start"        6 seconds ago   Up 2 seconds            0.0.0.0:8051->8051/tcp, 7051/tcp, 0.0.0.0:8053->8053/tcp              peer1.manufacturer.pharma.net
  32b4f80f3b9d   hyperledger/fabric-peer:latest      "peer node start"        6 seconds ago   Up 1 second             0.0.0.0:11051->11051/tcp, 7051/tcp, 0.0.0.0:11053->11053/tcp          peer0.retailer.pharma.net
  1114432dbf9f   hyperledger/fabric-peer:latest      "peer node start"        6 seconds ago   Up 1 second             0.0.0.0:9051->9051/tcp, 7051/tcp, 0.0.0.0:9053->9053/tcp              peer0.distributor.pharma.net
  d0d1aae14906   hyperledger/fabric-ca:latest        "sh -c 'fabric-ca-se…"   6 seconds ago   Up 1 second             0.0.0.0:9054->7054/tcp                                                  ca.retailer.pharma.net
  a091c4aba8d9   hyperledger/fabric-ca:latest        "sh -c 'fabric-ca-se…"   6 seconds ago   Up 2 seconds            0.0.0.0:11054->7054/tcp                                                 ca.transporter.pharma.net
  c1a5f8736d11   hyperledger/fabric-ccenv:latest     "/bin/bash -c 'sleep…"   6 seconds ago   Up 3 seconds                                                                                    chaincode
  643c6d1fd562   hyperledger/fabric-ca:latest        "sh -c 'fabric-ca-se…"   6 seconds ago   Up 1 second             0.0.0.0:10054->7054/tcp                                                 ca.consumer.pharma.net
  c148852264dc   hyperledger/fabric-ca:latest        "sh -c 'fabric-ca-se…"   6 seconds ago   Up 3 seconds            0.0.0.0:8054->7054/tcp                                                  ca.distributor.pharma.net
  Sleeping 10s to allow cluster to complete booting
```

Spawning up docker containers



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

Setting Up Hyperledger Fabric Network

Channel name : pharmachannel
Creating channel...
+ peer channel create -o orderer.pharma.net:7050 -c pharmachannel -f ./channel-artifacts/channel.tx --outputBlock ./channel-artifacts/pharmachannel.block --tls --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscac
erts/tlsca.pharma.net-cert.pem
+ res=0
+ set +x
2023-04-27 16:19:21.250 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:21.300 UTC 0002 INFO [cli.common] readBlock -> Expect block, but got status: &{NOT_FOUND}
2023-04-27 16:19:21.318 UTC 0003 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:21.521 UTC 0004 INFO [cli.common] readBlock -> Expect block, but got status: &{SERVICE_UNAVAILABLE}
2023-04-27 16:19:21.526 UTC 0005 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:21.729 UTC 0006 INFO [cli.common] readBlock -> Expect block, but got status: &{SERVICE_UNAVAILABLE}
2023-04-27 16:19:21.735 UTC 0007 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:21.937 UTC 0008 INFO [cli.common] readBlock -> Expect block, but got status: &{SERVICE_UNAVAILABLE}
2023-04-27 16:19:21.943 UTC 0009 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:22.145 UTC 000a INFO [cli.common] readBlock -> Expect block, but got status: &{SERVICE_UNAVAILABLE}
2023-04-27 16:19:22.166 UTC 000b INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:22.370 UTC 000c INFO [cli.common] readBlock -> Received block: 0
===================== Channel 'pharmachannel' created =====================

Having all peers join the channel...
+ peer channel join -b ./channel-artifacts/pharmachannel.block
+ res=0
+ set +x
2023-04-27 16:19:22.481 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:22.569 UTC 0002 INFO [channelCmd] executeJoin -> Successfully submitted proposal to join channel
===================== peer0.manufacturer.pharma.net  joined channel 'pharmachannel' =====================

+ peer channel join -b ./channel-artifacts/pharmachannel.block
+ res=0
+ set +x
2023-04-27 16:19:27.676 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:27.709 UTC 0002 INFO [channelCmd] executeJoin -> Successfully submitted proposal to join channel
===================== peer1.manufacturer.pharma.net  joined channel 'pharmachannel' =====================

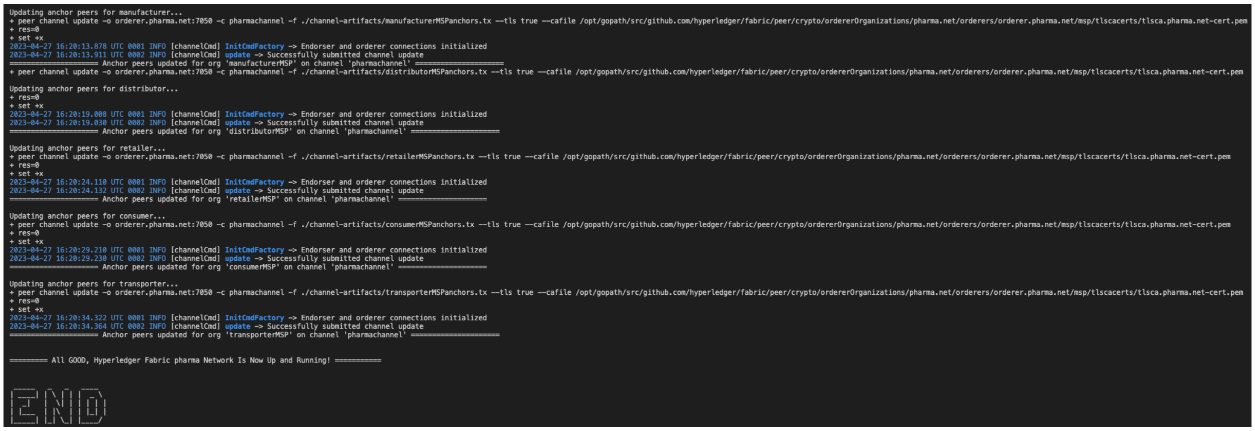
+ peer channel join -b ./channel-artifacts/pharmachannel.block
+ res=0
+ set +x
2023-04-27 16:19:32.797 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:32.844 UTC 0002 INFO [channelCmd] executeJoin -> Successfully submitted proposal to join channel
===================== peer0.distributor.pharma.net  joined channel 'pharmachannel' =====================

+ peer channel join -b ./channel-artifacts/pharmachannel.block
+ res=0
+ set +x
2023-04-27 16:19:37.935 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:37.972 UTC 0002 INFO [channelCmd] executeJoin -> Successfully submitted proposal to join channel
===================== peer1.distributor.pharma.net  joined channel 'pharmachannel' =====================

+ peer channel join -b ./channel-artifacts/pharmachannel.block
+ res=0
+ set +x
2023-04-27 16:19:43.068 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:19:43.145 UTC 0002 INFO [channelCmd] executeJoin -> Successfully submitted proposal to join channel
===================== peer0.retailer.pharma.net  joined channel 'pharmachannel' =====================

+ peer channel join -b ./channel-artifacts/pharmachannel.block
+ res=0
+ set +x
2023-04-27 16:19:48.232 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
```

Channel creation and making every peer join pharmachannel



```
Updating anchor peers for manufacturer...
+ peer channel update -o orderer.pharma.net:7050 -c pharmachannel -f ./channel-artifacts/manufacturerMSPanchors.tx --tls true --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem
+ res=0
+ set +x
2023-04-27 16:20:13.878 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:20:13.911 UTC 0002 INFO [channelCmd] update -> Successfully submitted channel update
===================== Anchor peers updated for org 'manufacturerMSP' on channel 'pharmachannel' =====================
+ peer channel update -o orderer.pharma.net:7050 -c pharmachannel -f ./channel-artifacts/distributorMSPanchors.tx --tls true --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem

Updating anchor peers for distributor...
+ res=0
+ set +x
2023-04-27 16:20:19.008 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:20:19.030 UTC 0002 INFO [channelCmd] update -> Successfully submitted channel update
===================== Anchor peers updated for org 'distributorMSP' on channel 'pharmachannel' =====================

Updating anchor peers for retailer...
+ peer channel update -o orderer.pharma.net:7050 -c pharmachannel -f ./channel-artifacts/retailerMSPanchors.tx --tls true --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem
+ res=0
+ set +x
2023-04-27 16:20:24.110 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:20:24.132 UTC 0002 INFO [channelCmd] update -> Successfully submitted channel update
===================== Anchor peers updated for org 'retailerMSP' on channel 'pharmachannel' =====================

Updating anchor peers for consumer...
+ peer channel update -o orderer.pharma.net:7050 -c pharmachannel -f ./channel-artifacts/consumerMSPanchors.tx --tls true --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem
+ res=0
+ set +x
2023-04-27 16:20:29.210 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:20:29.230 UTC 0002 INFO [channelCmd] update -> Successfully submitted channel update
===================== Anchor peers updated for org 'consumerMSP' on channel 'pharmachannel' =====================

Updating anchor peers for transporter...
+ peer channel update -o orderer.pharma.net:7050 -c pharmachannel -f ./channel-artifacts/transporterMSPanchors.tx --tls true --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem
+ res=0
+ set +x
2023-04-27 16:20:34.322 UTC 0001 INFO [channelCmd] InitCmdFactory -> Endorser and orderer connections initialized
2023-04-27 16:20:34.364 UTC 0002 INFO [channelCmd] update -> Successfully submitted channel update
===================== Anchor peers updated for org 'transporterMSP' on channel 'pharmachannel' =====================


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

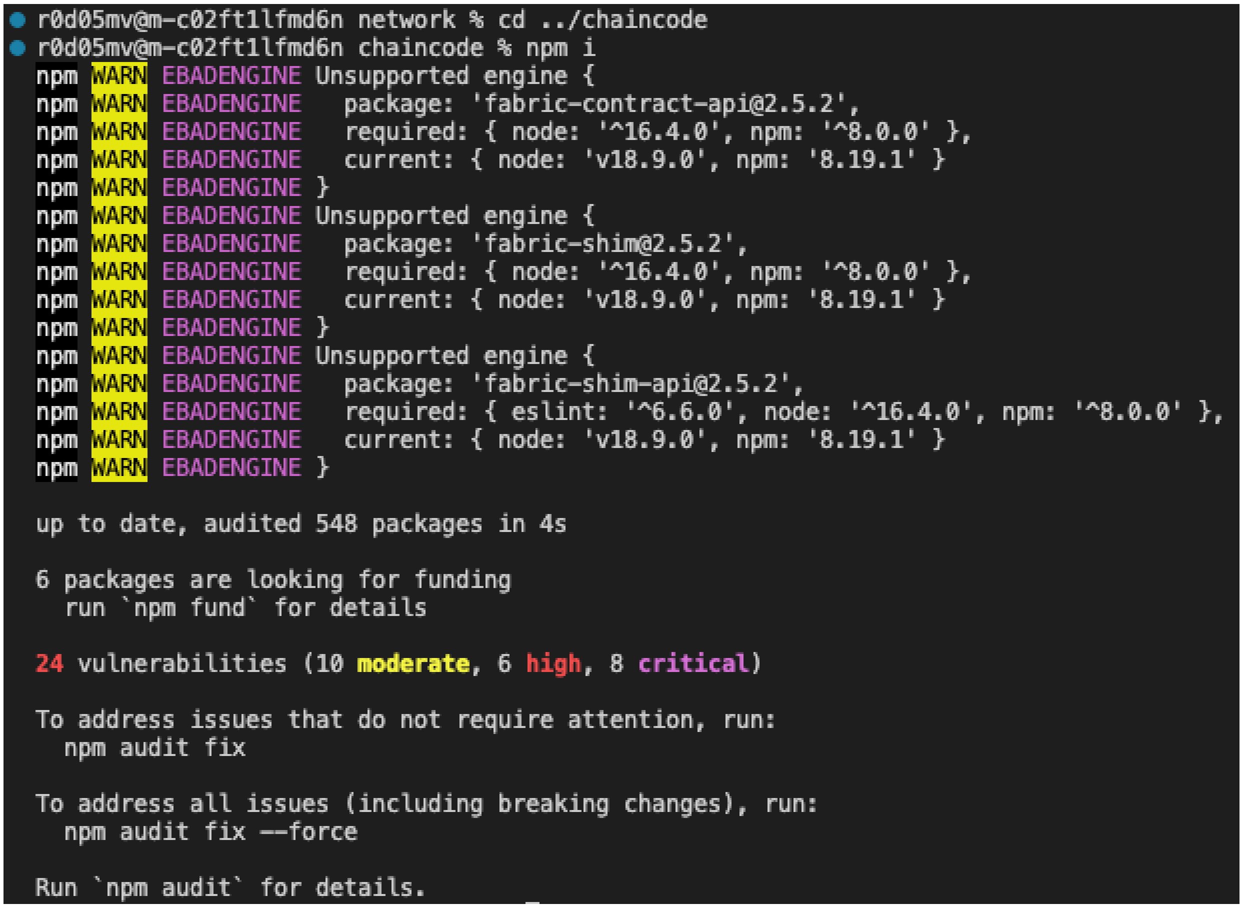

 _____   _   _   ____
| ____| | \ | | |  _ \
|  _|   |  \| | | | | |
| |___  | |\  | | |_| |
|_____| |_| \_| |____/
```

Setting the anchor peer for each organisation

Installing Chaincode

Move to the the `chaincode` folder, and install npm dependencies using the below command:

```
cd ../chaincode
npm i
```



```
● r0d05mv@m-c02ft1lfmd6n network % cd ../chaincode
● r0d05mv@m-c02ft1lfmd6n chaincode % npm i
  npm WARN EBADENGINE Unsupported engine {
  npm WARN EBADENGINE   package: 'fabric-contract-api@2.5.2',
  npm WARN EBADENGINE   required: { node: '^16.4.0', npm: '^8.0.0' },
  npm WARN EBADENGINE   current: { node: 'v18.9.0', npm: '8.19.1' }
  npm WARN EBADENGINE }
  npm WARN EBADENGINE Unsupported engine {
  npm WARN EBADENGINE   package: 'fabric-shim@2.5.2',
  npm WARN EBADENGINE   required: { node: '^16.4.0', npm: '^8.0.0' },
  npm WARN EBADENGINE   current: { node: 'v18.9.0', npm: '8.19.1' }
  npm WARN EBADENGINE }
  npm WARN EBADENGINE Unsupported engine {
  npm WARN EBADENGINE   package: 'fabric-shim-api@2.5.2',
  npm WARN EBADENGINE   required: { eslint: '^6.6.0', node: '^16.4.0', npm: '^8.0.0' },
  npm WARN EBADENGINE   current: { node: 'v18.9.0', npm: '8.19.1' }
  npm WARN EBADENGINE }

  up to date, audited 548 packages in 4s

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

  24 vulnerabilities (10 moderate, 6 high, 8 critical)

  To address issues that do not require attention, run:
    npm audit fix

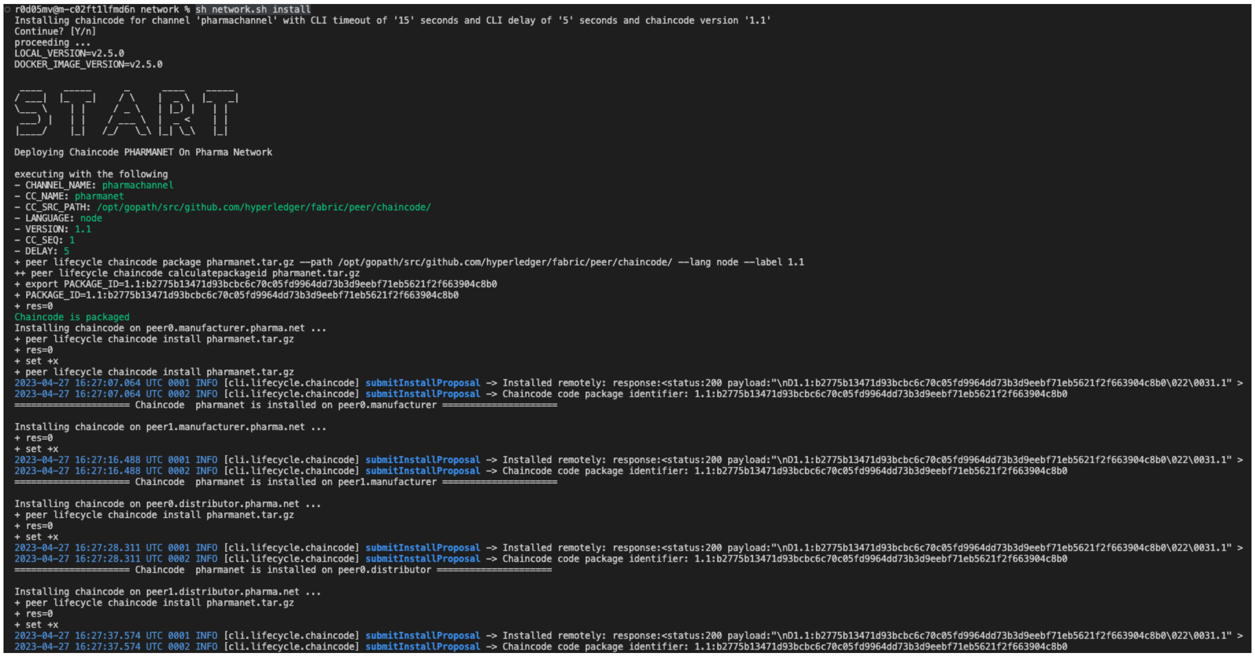
  To address all issues (including breaking changes), run:
    npm audit fix --force

  Run `npm audit` for details.
```

Chaincode dependencies installation

Move to `network` folder and issue the `install` command using `network.sh` script. Optionally you can pass the version of your chaincode using the `-v` arugment.

```
sh network.sh install
```



```
○ r0d05mv@m-c02ft1lfmd6n network % sh network.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]
  proceeding ...
  LOCAL_VERSION=v2.5.0
  DOCKER_IMAGE_VERSION=v2.5.0

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

  Deploying Chaincode PHARMANET On Pharma Network

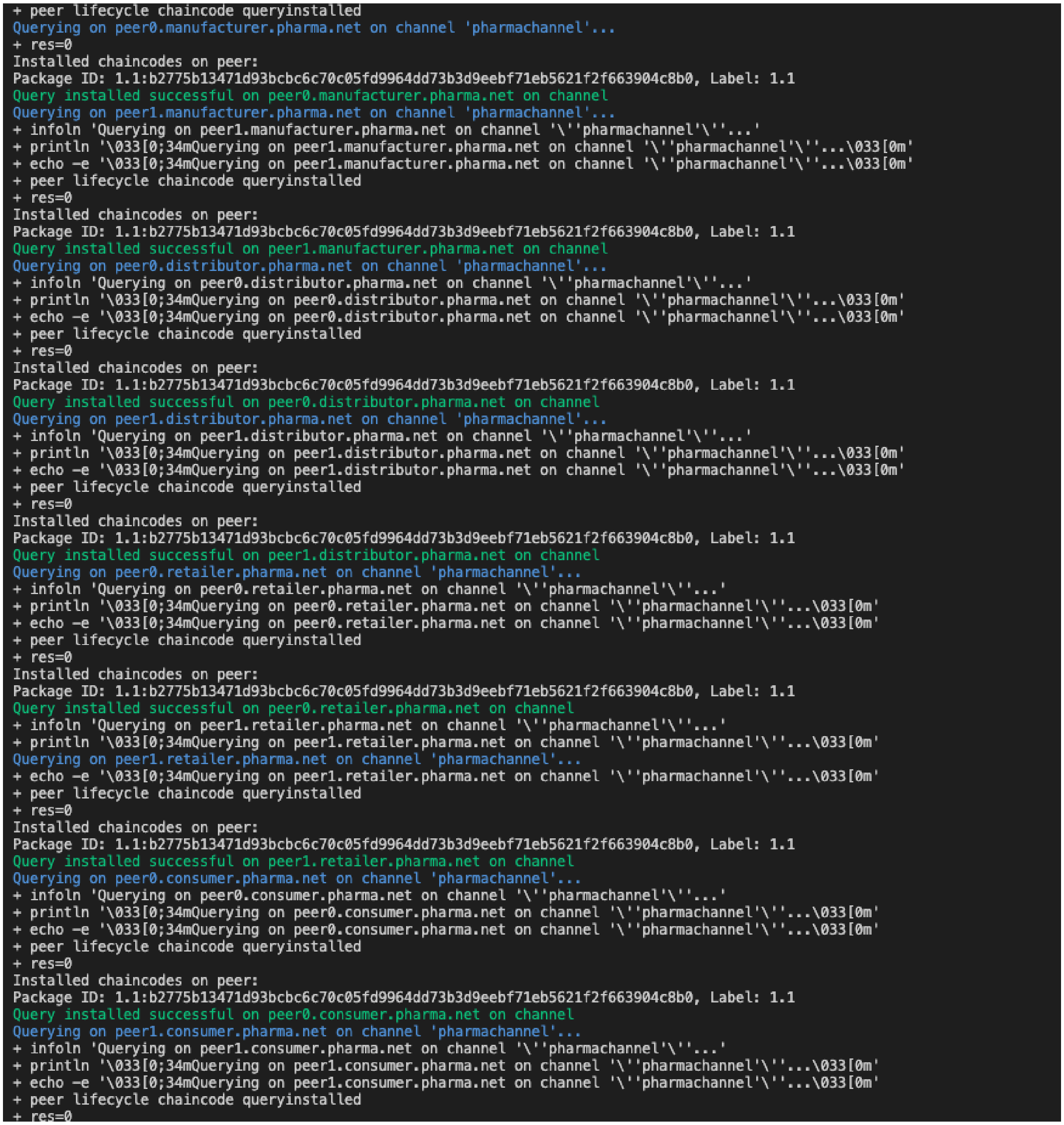
  executing with the following
  - CHANNEL_NAME: pharmachannel
  - CC_NAME: pharmanet
  - CC_SRC_PATH: /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
  - LANGUAGE: node
  - VERSION: 1.1
  - CC_SEQ: 1
  - DELAY: 5
  + peer lifecycle chaincode package pharmanet.tar.gz --path /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/ --lang node --label 1.1
  ++ peer lifecycle chaincode calculatepackageid pharmanet.tar.gz
  + export PACKAGE_ID=1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
  + PACKAGE_ID=1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
  + res=0
  Chaincode is packaged
  Installing chaincode on peer0.manufacturer.pharma.net ...
  + peer lifecycle chaincode install pharmanet.tar.gz
  + res=0
  + set +x
  + peer lifecycle chaincode install pharmanet.tar.gz
  2023-04-27 16:27:07.064 UTC 0001 INFO [cli.lifecycle.chaincode] submitInstallProposal -> Installed remotely: response:<status:200 payload:"\nD1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0\022\0031.1" >
  2023-04-27 16:27:07.064 UTC 0002 INFO [cli.lifecycle.chaincode] submitInstallProposal -> Chaincode code package identifier: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
  ==================== Chaincode  pharmanet is installed on peer0.manufacturer ====================

  Installing chaincode on peer1.manufacturer.pharma.net ...
  + res=0
  + set +x
  2023-04-27 16:27:16.488 UTC 0001 INFO [cli.lifecycle.chaincode] submitInstallProposal -> Installed remotely: response:<status:200 payload:"\nD1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0\022\0031.1" >
  2023-04-27 16:27:16.488 UTC 0002 INFO [cli.lifecycle.chaincode] submitInstallProposal -> Chaincode code package identifier: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
  ==================== Chaincode  pharmanet is installed on peer1.manufacturer ====================

  Installing chaincode on peer0.distributor.pharma.net ...
  + peer lifecycle chaincode install pharmanet.tar.gz
  + res=0
  + set +x
  2023-04-27 16:27:28.311 UTC 0001 INFO [cli.lifecycle.chaincode] submitInstallProposal -> Installed remotely: response:<status:200 payload:"\nD1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0\022\0031.1" >
  2023-04-27 16:27:28.311 UTC 0002 INFO [cli.lifecycle.chaincode] submitInstallProposal -> Chaincode code package identifier: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
  ==================== Chaincode  pharmanet is installed on peer0.distributor ====================

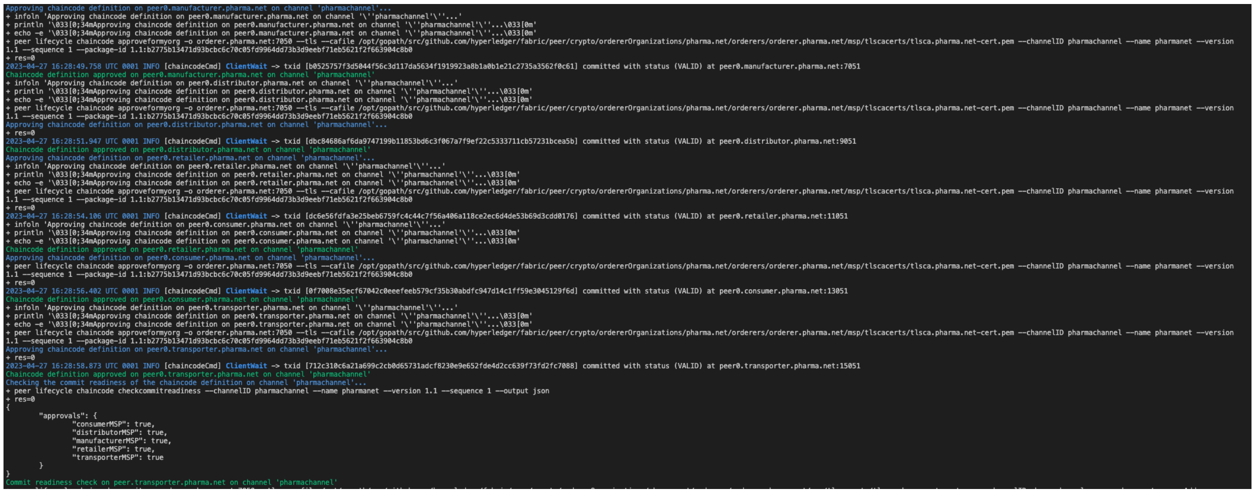
  Installing chaincode on peer1.distributor.pharma.net ...
  + peer lifecycle chaincode install pharmanet.tar.gz
  + res=0
  + set +x
  2023-04-27 16:27:37.574 UTC 0001 INFO [cli.lifecycle.chaincode] submitInstallProposal -> Installed remotely: response:<status:200 payload:"\nD1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0\022\0031.1" >
  2023-04-27 16:27:37.574 UTC 0002 INFO [cli.lifecycle.chaincode] submitInstallProposal -> Chaincode code package identifier: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
```

Installing chaincode on each peer



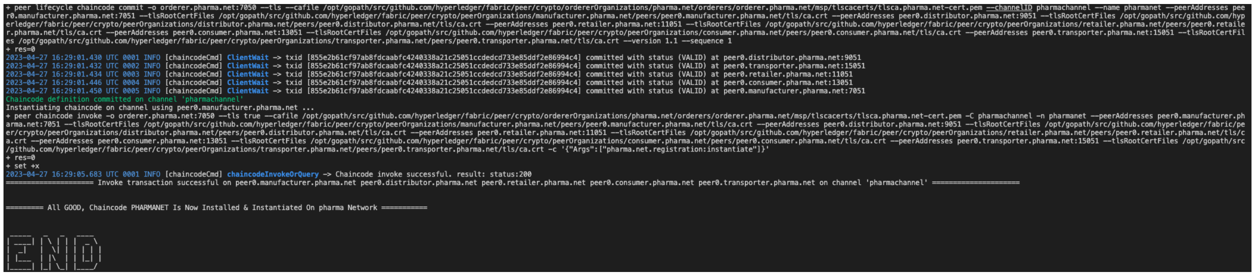
```
+ peer lifecycle chaincode queryinstalled
Querying on peer0.manufacturer.pharma.net on channel 'pharmachannel'...
+ res=0
Installed chaincodes on peer:
Package ID: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0, Label: 1.1
Query installed successful on peer0.manufacturer.pharma.net on channel
Querying on peer1.manufacturer.pharma.net on channel 'pharmachannel'...
+ infoln 'Querying on peer1.manufacturer.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mQuerying on peer1.manufacturer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mQuerying on peer1.manufacturer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode queryinstalled
+ res=0
Installed chaincodes on peer:
Package ID: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0, Label: 1.1
Query installed successful on peer1.manufacturer.pharma.net on channel
Querying on peer0.distributor.pharma.net on channel 'pharmachannel'...
+ infoln 'Querying on peer0.distributor.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mQuerying on peer0.distributor.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mQuerying on peer0.distributor.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode queryinstalled
+ res=0
Installed chaincodes on peer:
Package ID: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0, Label: 1.1
Query installed successful on peer0.distributor.pharma.net on channel
Querying on peer1.distributor.pharma.net on channel 'pharmachannel'...
+ infoln 'Querying on peer1.distributor.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mQuerying on peer1.distributor.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mQuerying on peer1.distributor.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode queryinstalled
+ res=0
Installed chaincodes on peer:
Package ID: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0, Label: 1.1
Query installed successful on peer1.distributor.pharma.net on channel
Querying on peer0.retailer.pharma.net on channel 'pharmachannel'...
+ infoln 'Querying on peer0.retailer.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mQuerying on peer0.retailer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mQuerying on peer0.retailer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode queryinstalled
+ res=0
Installed chaincodes on peer:
Package ID: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0, Label: 1.1
Query installed successful on peer0.retailer.pharma.net on channel
+ infoln 'Querying on peer1.retailer.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mQuerying on peer1.retailer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
Querying on peer1.retailer.pharma.net on channel 'pharmachannel'...
+ echo -e '\033[0;34mQuerying on peer1.retailer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode queryinstalled
+ res=0
Installed chaincodes on peer:
Package ID: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0, Label: 1.1
Query installed successful on peer1.retailer.pharma.net on channel
Querying on peer0.consumer.pharma.net on channel 'pharmachannel'...
+ infoln 'Querying on peer0.consumer.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mQuerying on peer0.consumer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mQuerying on peer0.consumer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode queryinstalled
+ res=0
Installed chaincodes on peer:
Package ID: 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0, Label: 1.1
Query installed successful on peer0.consumer.pharma.net on channel
Querying on peer1.consumer.pharma.net on channel 'pharmachannel'...
+ infoln 'Querying on peer1.consumer.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mQuerying on peer1.consumer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mQuerying on peer1.consumer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode queryinstalled
+ res=0
```

Querying chaincode



```
Approving chaincode definition on peer0.manufacturer.pharma.net on channel 'pharmachannel'...
+ infoln 'Approving chaincode definition on peer0.manufacturer.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mApproving chaincode definition on peer0.manufacturer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mApproving chaincode definition on peer0.manufacturer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode approveformyorg -o orderer.pharma.net:7050 --tls --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem --channelID pharmachannel --name pharmanet --version
1.1 --sequence 1 --package-id 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
+ res=0
2023-04-27 16:28:49.758 UTC 0001 INFO [chaincodeCmd] ClientWait -> txid [b0525757f3d5044f56c3d117da5634f1919923a8b1a0b1e21c2735a3562f0c61] committed with status (VALID) at peer0.manufacturer.pharma.net:7051
Chaincode definition approved on peer0.manufacturer.pharma.net on channel 'pharmachannel'
+ infoln 'Approving chaincode definition on peer0.distributor.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mApproving chaincode definition on peer0.distributor.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mApproving chaincode definition on peer0.distributor.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode approveformyorg -o orderer.pharma.net:7050 --tls --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem --channelID pharmachannel --name pharmanet --version
1.1 --sequence 1 --package-id 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
Approving chaincode definition on peer0.distributor.pharma.net on channel 'pharmachannel'...
+ res=0
2023-04-27 16:28:51.947 UTC 0001 INFO [chaincodeCmd] ClientWait -> txid [dbc84686af6da9747199b11853bd6c3f067a7f9ef22c5333711cb57231bcea5b] committed with status (VALID) at peer0.distributor.pharma.net:9051
Chaincode definition approved on peer0.distributor.pharma.net on channel 'pharmachannel'
Approving chaincode definition on peer0.retailer.pharma.net on channel 'pharmachannel'...
+ infoln 'Approving chaincode definition on peer0.retailer.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mApproving chaincode definition on peer0.retailer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mApproving chaincode definition on peer0.retailer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode approveformyorg -o orderer.pharma.net:7050 --tls --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem --channelID pharmachannel --name pharmanet --version
1.1 --sequence 1 --package-id 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
+ res=0
2023-04-27 16:28:54.106 UTC 0001 INFO [chaincodeCmd] ClientWait -> txid [dc6e56fdfa3e25beb6759fc4c44c7f56a406a118ce2ec6d4de53b69d3cdd0176] committed with status (VALID) at peer0.retailer.pharma.net:11051
+ infoln 'Approving chaincode definition on peer0.consumer.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mApproving chaincode definition on peer0.consumer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mApproving chaincode definition on peer0.consumer.pharma.net on channel '\''pharmachannel'\''...\033[0m'
Chaincode definition approved on peer0.retailer.pharma.net on channel 'pharmachannel'
Approving chaincode definition on peer0.consumer.pharma.net on channel 'pharmachannel'...
+ peer lifecycle chaincode approveformyorg -o orderer.pharma.net:7050 --tls --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem --channelID pharmachannel --name pharmanet --version
1.1 --sequence 1 --package-id 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
+ res=0
2023-04-27 16:28:56.402 UTC 0001 INFO [chaincodeCmd] ClientWait -> txid [0f7008e35ecf67042c0eeefeeb579cf35b30abdfc947d14c1ff59e3045129f6d] committed with status (VALID) at peer0.consumer.pharma.net:13051
Chaincode definition approved on peer0.consumer.pharma.net on channel 'pharmachannel'
+ infoln 'Approving chaincode definition on peer0.transporter.pharma.net on channel '\''pharmachannel'\''...'
+ println '\033[0;34mApproving chaincode definition on peer0.transporter.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ echo -e '\033[0;34mApproving chaincode definition on peer0.transporter.pharma.net on channel '\''pharmachannel'\''...\033[0m'
+ peer lifecycle chaincode approveformyorg -o orderer.pharma.net:7050 --tls --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem --channelID pharmachannel --name pharmanet --version
1.1 --sequence 1 --package-id 1.1:b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0
Approving chaincode definition on peer0.transporter.pharma.net on channel 'pharmachannel'...
+ res=0
2023-04-27 16:28:58.873 UTC 0001 INFO [chaincodeCmd] ClientWait -> txid [712c310c6a21a699c2cb0d65731adcf8230e9e652fde4d2cc639f73fd2fc7088] committed with status (VALID) at peer0.transporter.pharma.net:15051
Chaincode definition approved on peer0.transporter.pharma.net on channel 'pharmachannel'
Checking the commit readiness of the chaincode definition on channel 'pharmachannel'...
+ peer lifecycle chaincode checkcommitreadiness --channelID pharmachannel --name pharmanet --version 1.1 --sequence 1 --output json
+ res=0
{
        "approvals": {
                "consumerMSP": true,
                "distributorMSP": true,
                "manufacturerMSP": true,
                "retailerMSP": true,
                "transporterMSP": true
        }
}
Commit readiness check on peer.transporter.pharma.net on channel 'pharmachannel'
```

Approving chaincode definition on each anchor peer and finally checking the commit readiness

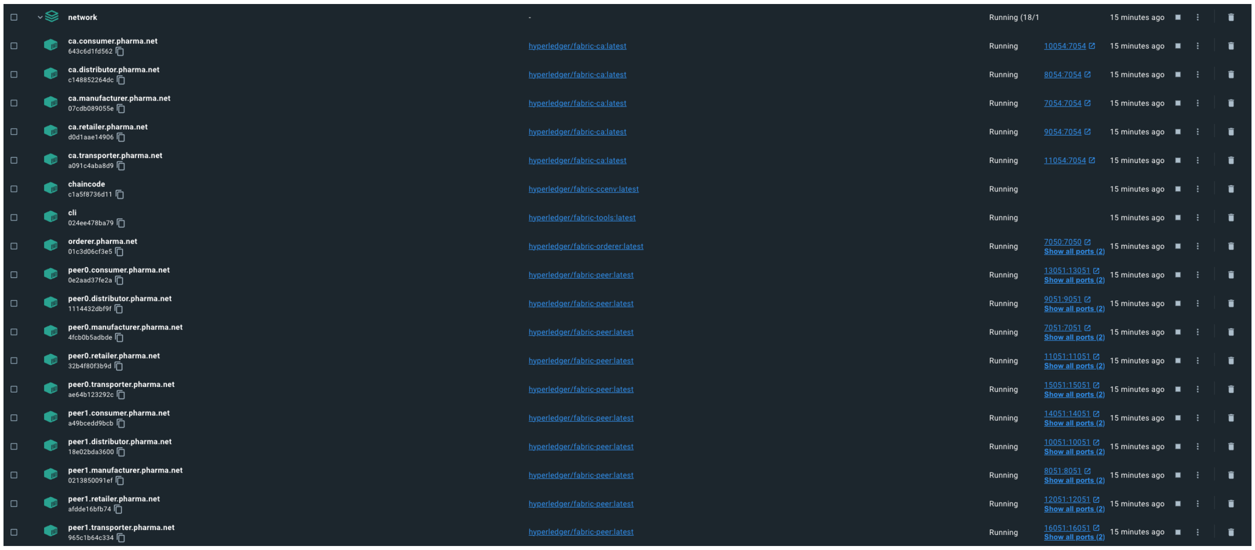


```
+ peer lifecycle chaincode commit -o orderer.pharma.net:7050 --tls --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem --channelID pharmachannel --name pharmanet --peerAddresses pee
r0.manufacturer.pharma.net:7051 --tlsRootCertFiles /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/manufacturer.pharma.net/peers/peer0.manufacturer.pharma.net/tls/ca.crt --peerAddresses peer0.distributor.pharma.net:9051 --tlsRootCertFiles /opt/gopath/src/github.com/hyp
erledger/fabric/peer/crypto/peerOrganizations/distributor.pharma.net/peers/peer0.distributor.pharma.net/tls/ca.crt --peerAddresses peer0.retailer.pharma.net:11051 --tlsRootCertFiles /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/retailer.pharma.net/peers/peer0.retaile
r.pharma.net/tls/ca.crt --peerAddresses peer0.consumer.pharma.net:13051 --tlsRootCertFiles /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/consumer.pharma.net/peers/peer0.consumer.pharma.net/tls/ca.crt --peerAddresses peer0.transporter.pharma.net:15051 --tlsRootCertFil
es /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/transporter.pharma.net/peers/peer0.transporter.pharma.net/tls/ca.crt --version 1.1 --sequence 1
+ res=0
2023-04-27 16:29:01.430 UTC 0001 INFO [chaincodeCmd] ClientWait -> txid [855e2b61cf97ab8fdcaabfc4240338a21c25051ccdedcd733e85ddf2e86994c4] committed with status (VALID) at peer0.distributor.pharma.net:9051
2023-04-27 16:29:01.432 UTC 0002 INFO [chaincodeCmd] ClientWait -> txid [855e2b61cf97ab8fdcaabfc4240338a21c25051ccdedcd733e85ddf2e86994c4] committed with status (VALID) at peer0.transporter.pharma.net:15051
2023-04-27 16:29:01.434 UTC 0003 INFO [chaincodeCmd] ClientWait -> txid [855e2b61cf97ab8fdcaabfc4240338a21c25051ccdedcd733e85ddf2e86994c4] committed with status (VALID) at peer0.retailer.pharma.net:11051
2023-04-27 16:29:01.446 UTC 0004 INFO [chaincodeCmd] ClientWait -> txid [855e2b61cf97ab8fdcaabfc4240338a21c25051ccdedcd733e85ddf2e86994c4] committed with status (VALID) at peer0.consumer.pharma.net:13051
2023-04-27 16:29:01.450 UTC 0005 INFO [chaincodeCmd] ClientWait -> txid [855e2b61cf97ab8fdcaabfc4240338a21c25051ccdedcd733e85ddf2e86994c4] committed with status (VALID) at peer0.manufacturer.pharma.net:7051
Chaincode definition committed on channel 'pharmachannel'
Instantiating chaincode on channel using peer0.manufacturer.pharma.net ...
+ peer chaincode invoke -o orderer.pharma.net:7050 --tls true --cafile /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/ordererOrganizations/pharma.net/orderers/orderer.pharma.net/msp/tlscacerts/tlsca.pharma.net-cert.pem -C pharmachannel -n pharmanet --peerAddresses peer0.manufacturer.ph
arma.net:7051 --tlsRootCertFiles /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/manufacturer.pharma.net/peers/peer0.manufacturer.pharma.net/tls/ca.crt --peerAddresses peer0.distributor.pharma.net:9051 --tlsRootCertFiles /opt/gopath/src/github.com/hyperledger/fabric/pe
er/crypto/peerOrganizations/distributor.pharma.net/peers/peer0.distributor.pharma.net/tls/ca.crt --peerAddresses peer0.retailer.pharma.net:11051 --tlsRootCertFiles /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/retailer.pharma.net/peers/peer0.retailer.pharma.net/tls/c
a.crt --peerAddresses peer0.consumer.pharma.net:13051 --tlsRootCertFiles /opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/consumer.pharma.net/peers/peer0.consumer.pharma.net/tls/ca.crt --peerAddresses peer0.transporter.pharma.net:15051 --tlsRootCertFiles /opt/gopath/src
/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/transporter.pharma.net/peers/peer0.transporter.pharma.net/tls/ca.crt -c '{"Args":["pharma.net.registration:instantiate"]}'
+ res=0
+ set +x
2023-04-27 16:29:05.683 UTC 0001 INFO [chaincodeCmd] chaincodeInvokeOrQuery -> Chaincode invoke successful. result: status:200
===================== Invoke transaction successful on peer0.manufacturer.pharma.net peer0.distributor.pharma.net peer0.retailer.pharma.net peer0.consumer.pharma.net peer0.transporter.pharma.net on channel 'pharmachannel' =====================


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

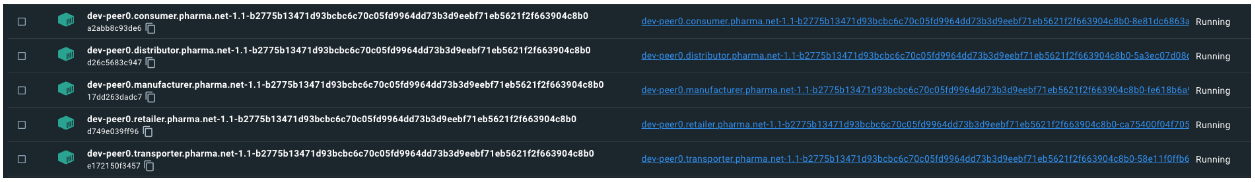

 _____   _   _   ____
| ____| | \ | | |  _ \
|  _|   |  \| | | | | |
| |___  | |\  | | |_| |
|_____| |_| \_| |____/
```

Committing chaincode definition



☐	**network**	-	Running (18/1		15 minutes ago
☐	**ca.consumer.pharma.net** 643c6d1fd562	hyperledger/fabric-ca:latest	Running	10054:7054	15 minutes ago
☐	**ca.distributor.pharma.net** c148852264dc	hyperledger/fabric-ca:latest	Running	8054:7054	15 minutes ago
☐	**ca.manufacturer.pharma.net** 07cdb089055e	hyperledger/fabric-ca:latest	Running	7054:7054	15 minutes ago
☐	**ca.retailer.pharma.net** d0d1aae14906	hyperledger/fabric-ca:latest	Running	9054:7054	15 minutes ago
☐	**ca.transporter.pharma.net** a091c4aba8d9	hyperledger/fabric-ca:latest	Running	11054:7054	15 minutes ago
☐	**chaincode** c1a5f8736d11	hyperledger/fabric-ccenv:latest	Running		15 minutes ago
☐	**cli** 024ee478ba79	hyperledger/fabric-tools:latest	Running		15 minutes ago
☐	**orderer.pharma.net** 01c3d06cf3e5	hyperledger/fabric-orderer:latest	Running	7050:7050 Show all ports (2)	15 minutes ago
☐	**peer0.consumer.pharma.net** 0e2aad37fe2a	hyperledger/fabric-peer:latest	Running	13051:13051 Show all ports (2)	15 minutes ago
☐	**peer0.distributor.pharma.net** 1114432dbf9f	hyperledger/fabric-peer:latest	Running	9051:9051 Show all ports (2)	15 minutes ago
☐	**peer0.manufacturer.pharma.net** 4fcb0b5adbde	hyperledger/fabric-peer:latest	Running	7051:7051 Show all ports (2)	15 minutes ago
☐	**peer0.retailer.pharma.net** 32b4f80f3b9d	hyperledger/fabric-peer:latest	Running	11051:11051 Show all ports (2)	15 minutes ago
☐	**peer0.transporter.pharma.net** ae64b123292c	hyperledger/fabric-peer:latest	Running	15051:15051 Show all ports (2)	15 minutes ago
☐	**peer1.consumer.pharma.net** a49bcedd9bcb	hyperledger/fabric-peer:latest	Running	14051:14051 Show all ports (2)	15 minutes ago
☐	**peer1.distributor.pharma.net** 18e02bda3600	hyperledger/fabric-peer:latest	Running	10051:10051 Show all ports (2)	15 minutes ago
☐	**peer1.manufacturer.pharma.net** 0213850091ef	hyperledger/fabric-peer:latest	Running	8051:8051 Show all ports (2)	15 minutes ago
☐	**peer1.retailer.pharma.net** afdde16bfb74	hyperledger/fabric-peer:latest	Running	12051:12051 Show all ports (2)	15 minutes ago
☐	**peer1.transporter.pharma.net** 965c1b64c334	hyperledger/fabric-peer:latest	Running	16051:16051 Show all ports (2)	15 minutes ago

Docker desktop with all peers and cli nodes running inside the network



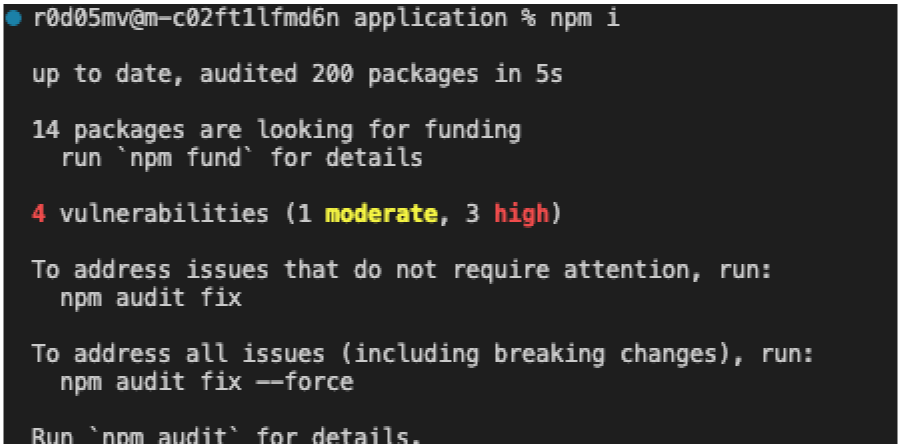
☐	dev-peer0.consumer.pharma.net-1.1-b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0 a2abb8c93de6	dev-peer0.consumer.pharma.net-1.1-b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0-8e81dc6863a	Running
☐	dev-peer0.distributor.pharma.net-1.1-b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0 d26c5683c947	dev-peer0.distributor.pharma.net-1.1-b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0-5a3ec07d08	Running
☐	dev-peer0.manufacturer.pharma.net-1.1-b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0 17dd263dadc7	dev-peer0.manufacturer.pharma.net-1.1-b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0-fe618b6a	Running
☐	dev-peer0.retailer.pharma.net-1.1-b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0 d749e039ff96	dev-peer0.retailer.pharma.net-1.1-b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0-ca75400f04f705	Running
☐	dev-peer0.transporter.pharma.net-1.1-b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0 e172150f3457	dev-peer0.transporter.pharma.net-1.1-b2775b13471d93bcbc6c70c05fd9964dd73b3d9eebf71eb5621f2f663904c8b0-58e11f0ffb6	Running

External chaincode builder for each peer

Starting up backend application

Move to the application folder and run a `npm install` command to install all the required dependencies.

```
npm i
```



```
r0d05mv@m-c02ft1lfmd6n application % npm i

up to date, audited 200 packages in 5s

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

4 vulnerabilities (1 moderate, 3 high)

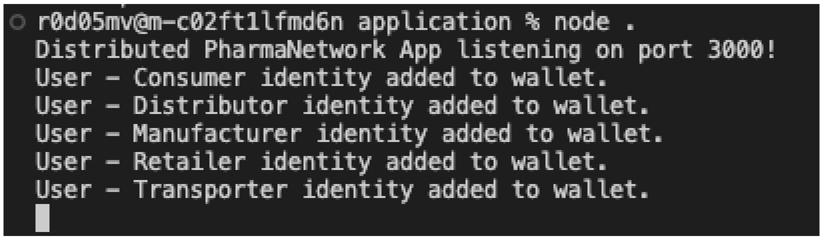
To address issues that do not require attention, run:
  npm audit fix

To address all issues (including breaking changes), run:
  npm audit fix --force

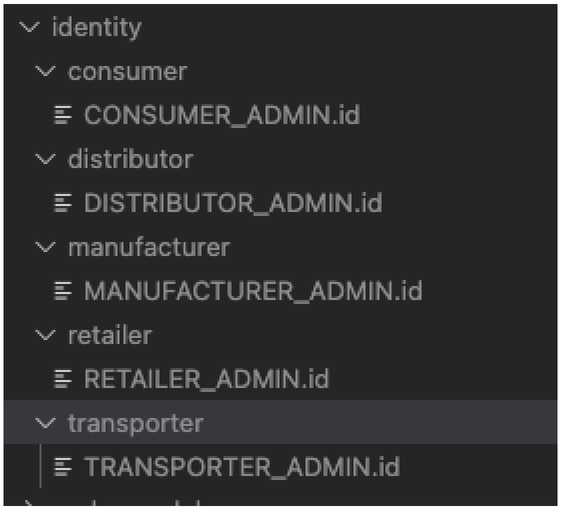
Run `npm audit` for details.
```

Start the node application using the below command. Node will start listening to port `3000`. This will also initiate a `wallet` under `identity` folder and add identity for each organisation.

```
node .
```



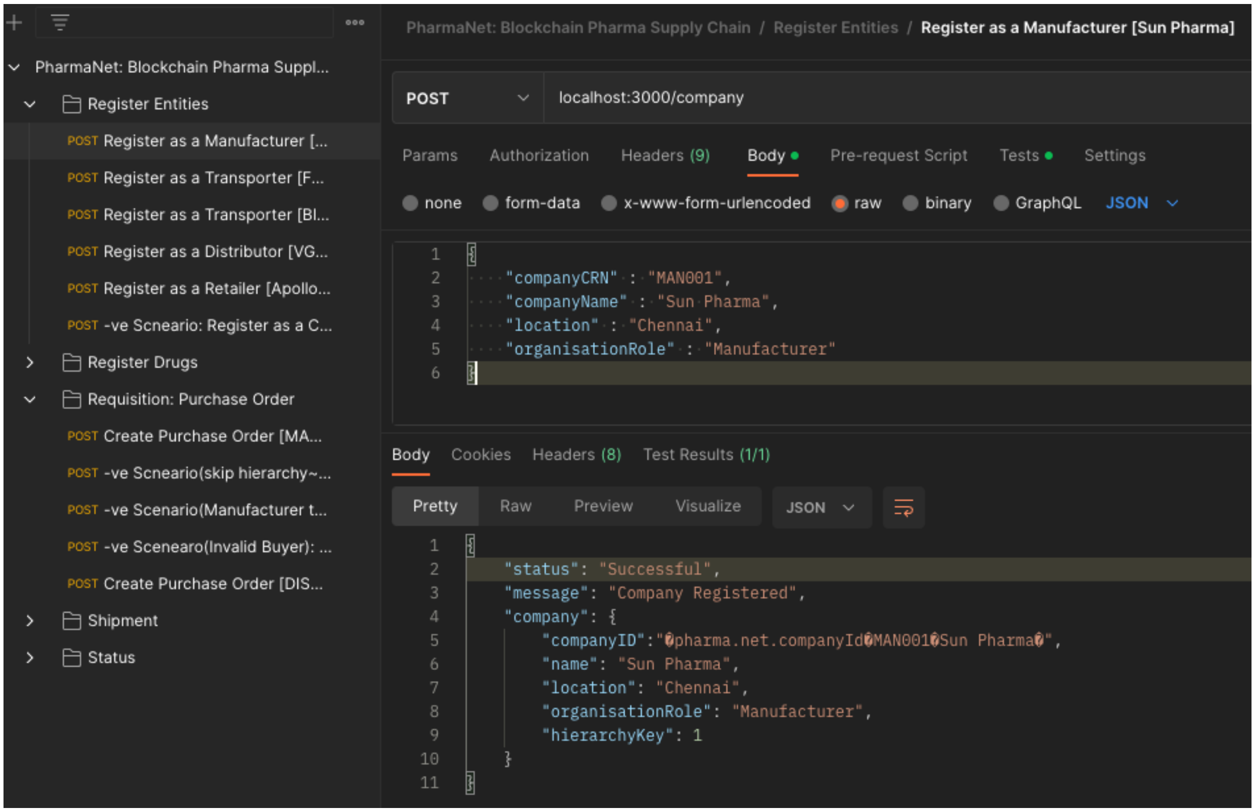
```
r0d05mv@m-c02ft1lfmd6n application % node .
Distributed PharmaNetwork App listening on port 3000!
User - Consumer identity added to wallet.
User - Distributor identity added to wallet.
User - Manufacturer identity added to wallet.
User - Retailer identity added to wallet.
User - Transporter identity added to wallet.
```



identity
- consumer
  - CONSUMER_ADMIN.id
- distributor
  - DISTRIBUTOR_ADMIN.id
- manufacturer
  - MANUFACTURER_ADMIN.id
- retailer
  - RETAILER_ADMIN.id
- transporter
  - TRANSPORTER_ADMIN.id

Use the Postman collection given to import the Collection to postman and try each functionalities.

Register as a Manufacturer


PharmaNet: Blockchain Pharma Suppl...
Register Entities
POST Register as a Manufacturer [...
POST Register as a Transporter [F...
POST Register as a Transporter [Bl...
POST Register as a Distributor [VG...
POST Register as a Retailer [Apollo...
POST -ve Scneario: Register as a C...
Register Drugs
Requisition: Purchase Order
POST Create Purchase Order [MA...
POST -ve Scneario(skip hierarchy~...
POST -ve Scenario(Manufacturer t...
POST -ve Sceneаro(Invalid Buyer): ...
POST Create Purchase Order [DIS...
Shipment
Status
PharmaNet: Blockchain Pharma Supply Chain / Register Entities / Register as a Manufacturer [Sun Pharma]
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize

POST localhost:3000/company

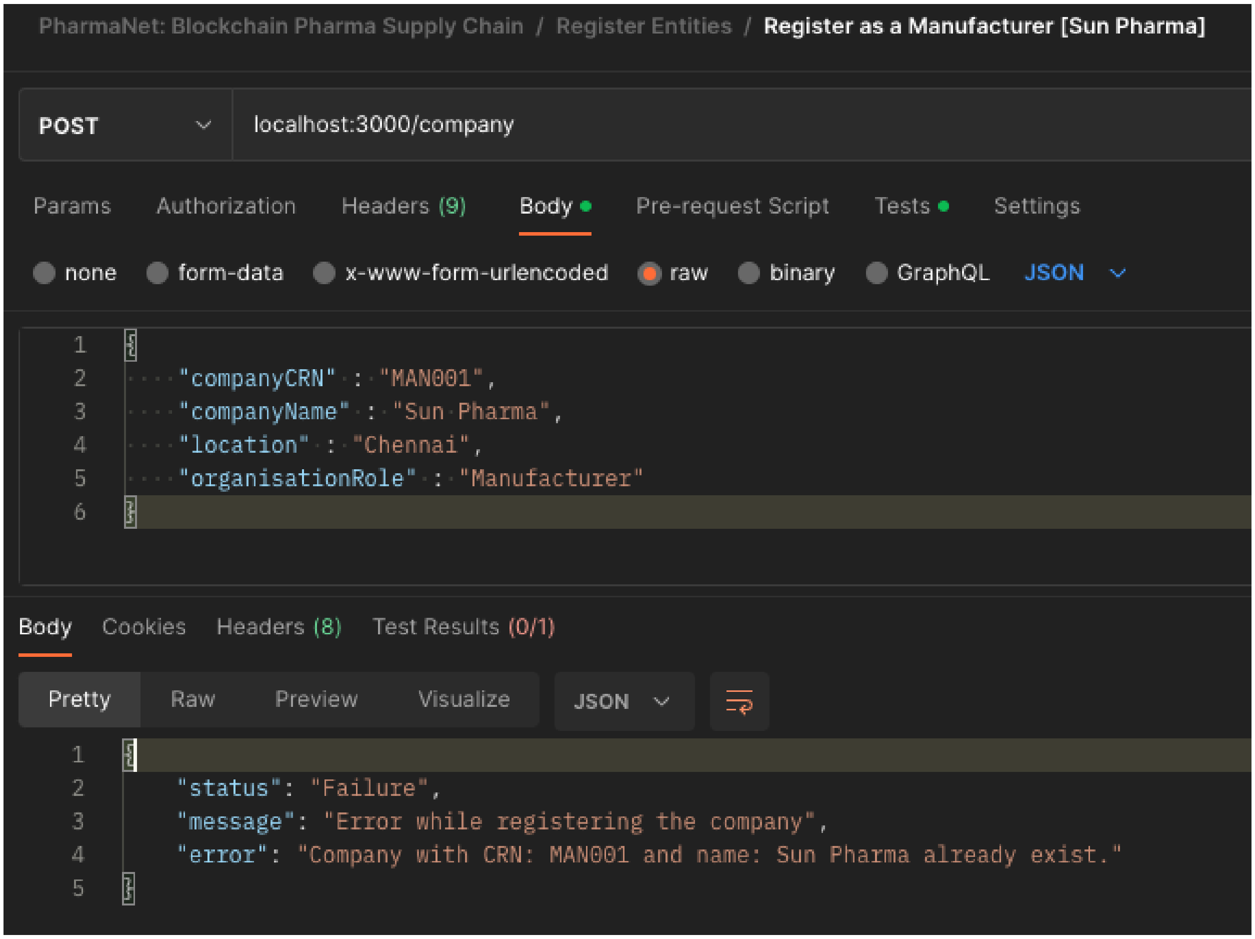
Body: ○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON

```
{
    "companyCRN" : "MAN001",
    "companyName" : "Sun Pharma",
    "location" : "Chennai",
    "organisationRole" : "Manufacturer"
}
```

Response Body (JSON):

```
{
    "status": "Successful",
    "message": "Company Registered",
    "company": {
        "companyID":"�pharma.net.companyId�MAN001�Sun Pharma�",
        "name": "Sun Pharma",
        "location": "Chennai",
        "organisationRole": "Manufacturer",
        "hierarchyKey": 1
    }
}
```

Registering another entity with same CRN and Name would result in a failure

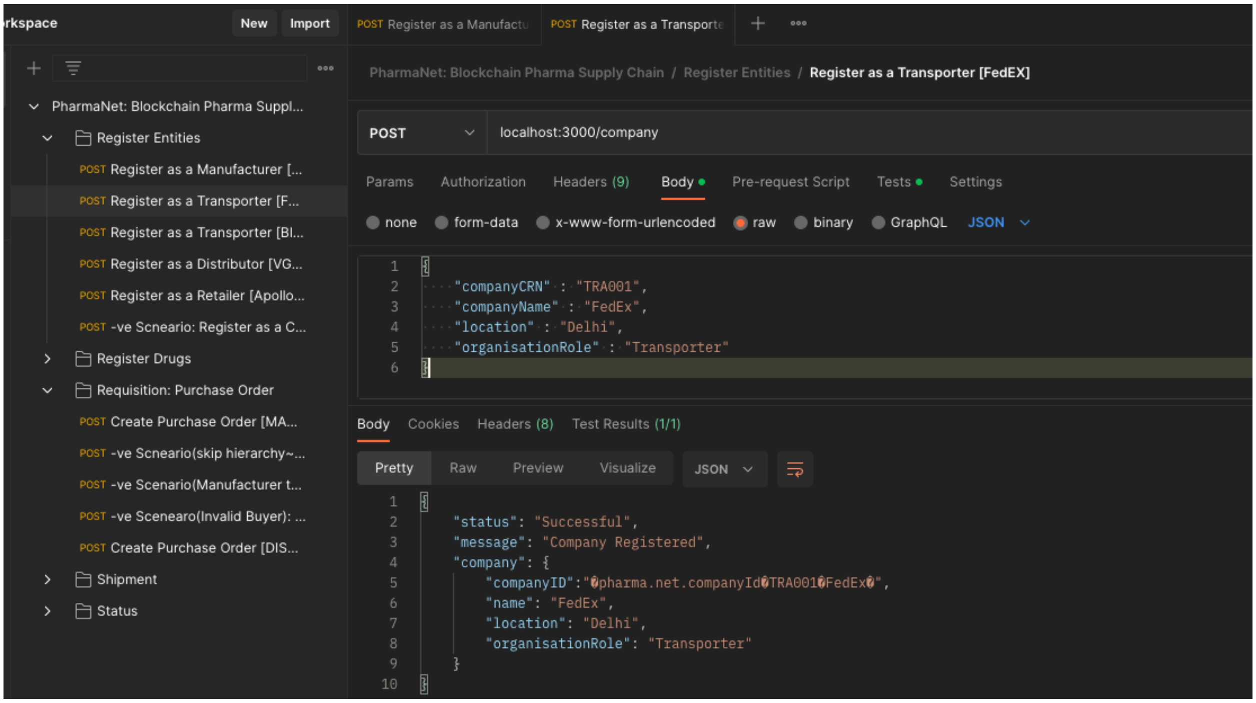

PharmaNet: Blockchain Pharma Supply Chain / Register Entities / Register as a Manufacturer [Sun Pharma]
POST
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (0/1)
Pretty
Raw
Preview
Visualize
JSON

```
localhost:3000/company
```

```
{
    "companyCRN" : "MAN001",
    "companyName" : "Sun Pharma",
    "location" : "Chennai",
    "organisationRole" : "Manufacturer"
}
```

```
{
    "status": "Failure",
    "message": "Error while registering the company",
    "error": "Company with CRN: MAN001 and name: Sun Pharma already exist."
}
```

Registering as Transporter


rkspace
New
Import
POST Register as a Manufactu
POST Register as a Transporte
PharmaNet: Blockchain Pharma Suppl...
Register Entities
POST Register as a Manufacturer [...
POST Register as a Transporter [F...
POST Register as a Transporter [Bl...
POST Register as a Distributor [VG...
POST Register as a Retailer [Apollo...
POST -ve Scneario: Register as a C...
Register Drugs
Requisition: Purchase Order
POST Create Purchase Order [MA...
POST -ve Scneario(skip hierarchy~...
POST -ve Scenario(Manufacturer t...
POST -ve Scenearo(Invalid Buyer): ...
POST Create Purchase Order [DIS...
Shipment
Status
PharmaNet: Blockchain Pharma Supply Chain / Register Entities / Register as a Transporter [FedEX]
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

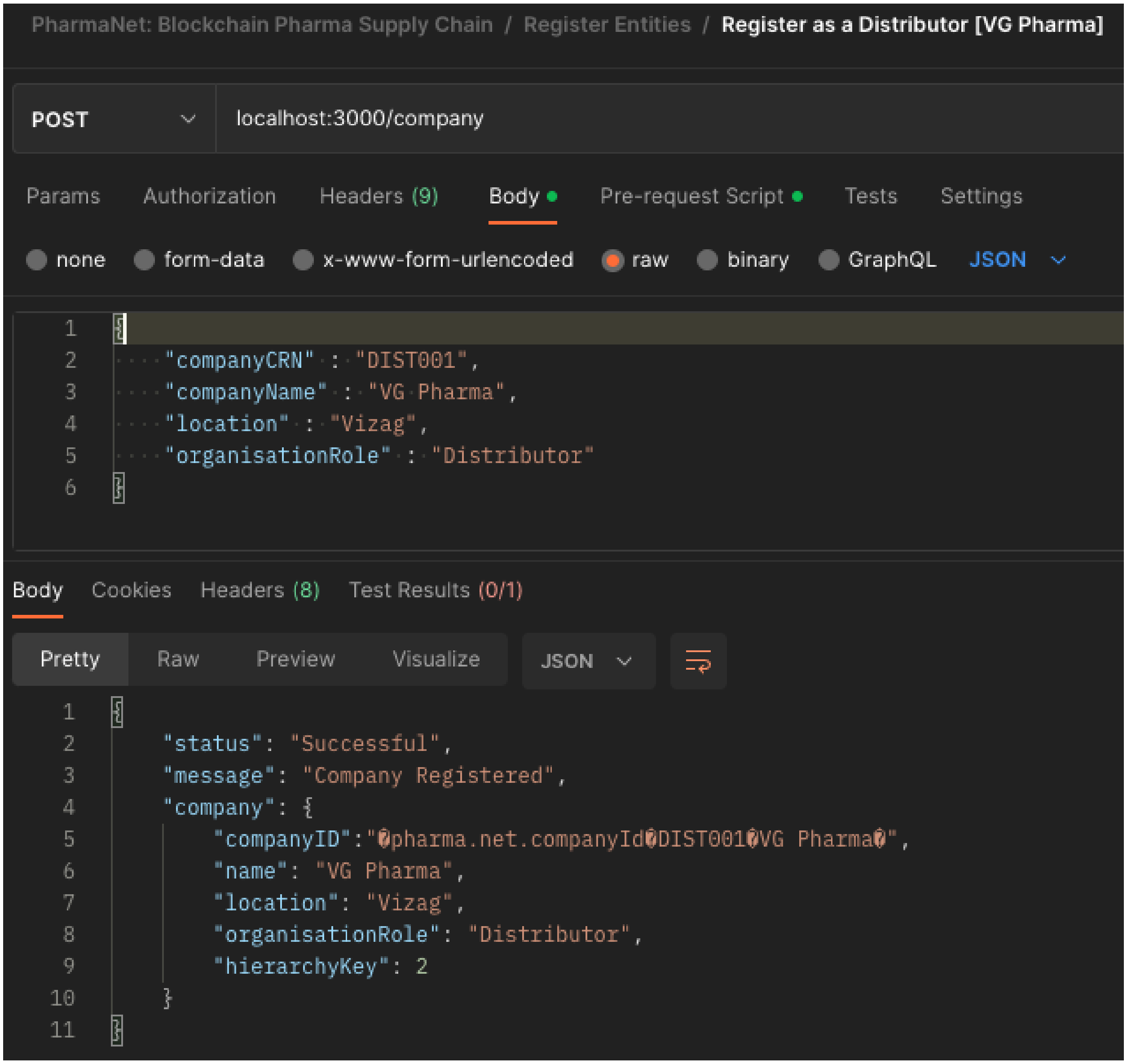
POST localhost:3000/company

Body: ● raw, JSON

```
{
    "companyCRN" : "TRA001",
    "companyName" : "FedEx",
    "location" : "Delhi",
    "organisationRole" : "Transporter"
}
```

```
{
    "status": "Successful",
    "message": "Company Registered",
    "company": {
        "companyID":"�pharma.net.companyId�TRA001�FedEx�",
        "name": "FedEx",
        "location": "Delhi",
        "organisationRole": "Transporter"
    }
}
```

Registering as Distributor

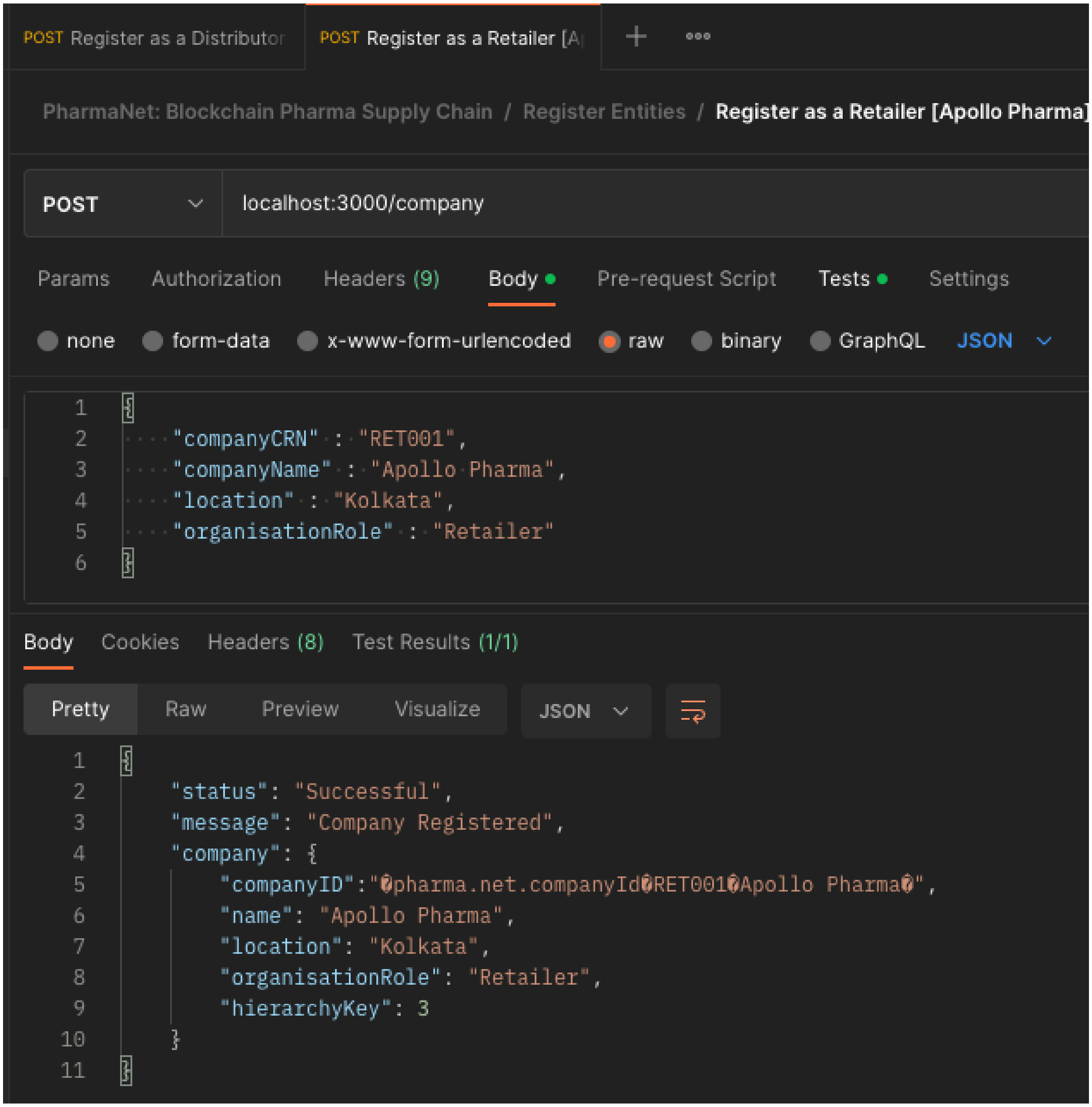

PharmaNet: Blockchain Pharma Supply Chain / Register Entities / Register as a Distributor [VG Pharma]
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
○ none
○ form-data
○ x-www-form-urlencoded
● raw
○ binary
○ GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (0/1)
Pretty
Raw
Preview
Visualize
JSON

POST localhost:3000/company

```
{
    "companyCRN" : "DIST001",
    "companyName" : "VG Pharma",
    "location" : "Vizag",
    "organisationRole" : "Distributor"
}
```

```
{
    "status": "Successful",
    "message": "Company Registered",
    "company": {
        "companyID":"�pharma.net.companyId�DIST001�VG Pharma�",
        "name": "VG Pharma",
        "location": "Vizag",
        "organisationRole": "Distributor",
        "hierarchyKey": 2
    }
}
```

Registering as Retailer


POST Register as a Distributor
POST Register as a Retailer [A
PharmaNet: Blockchain Pharma Supply Chain / Register Entities / Register as a Retailer [Apollo Pharma]
POST
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

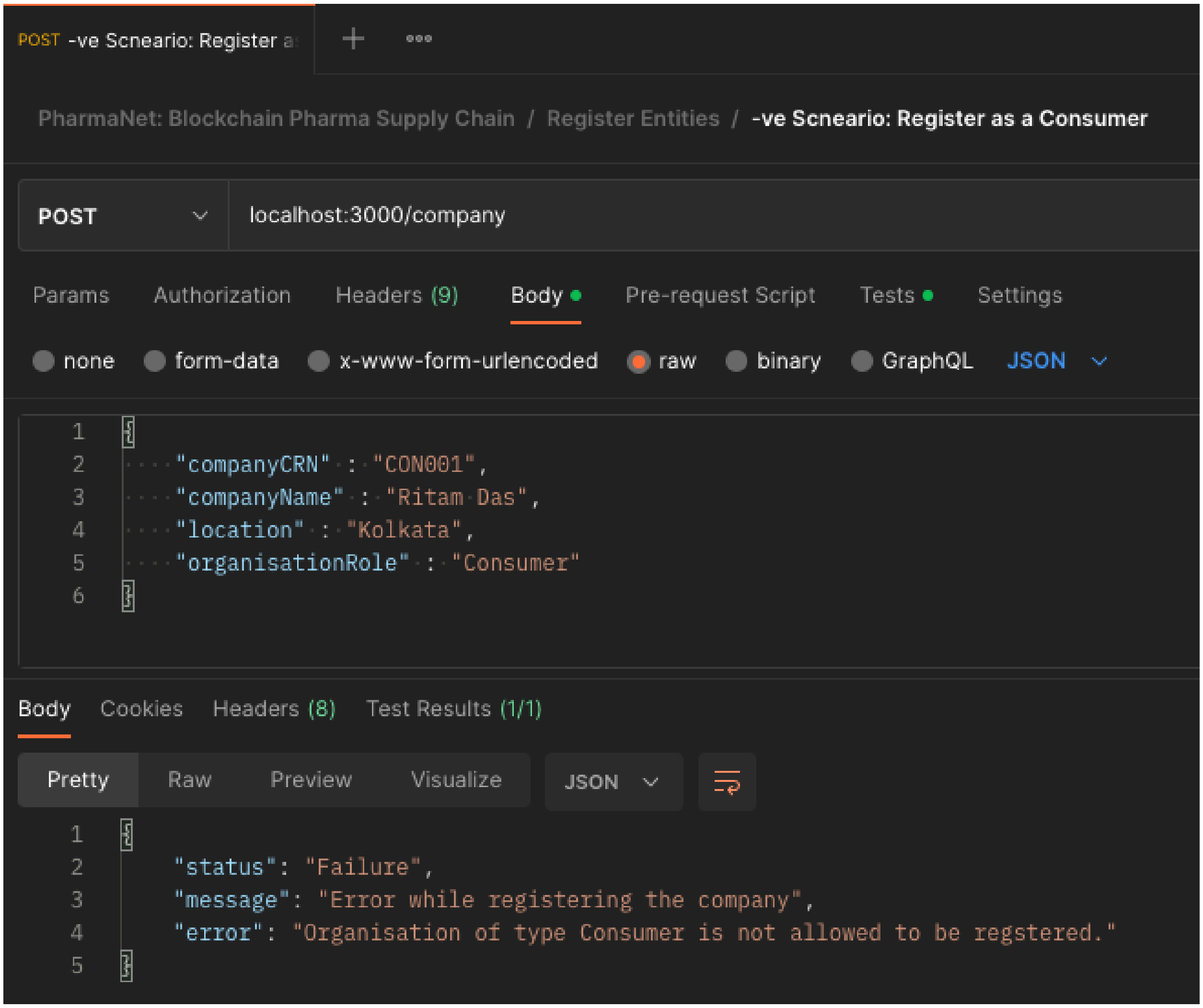
POST localhost:3000/company

Body: raw JSON

```
{
    "companyCRN" : "RET001",
    "companyName" : "Apollo Pharma",
    "location" : "Kolkata",
    "organisationRole" : "Retailer"
}
```

```
{
    "status": "Successful",
    "message": "Company Registered",
    "company": {
        "companyID":"�pharma.net.companyId�RET001�Apollo Pharma�",
        "name": "Apollo Pharma",
        "location": "Kolkata",
        "organisationRole": "Retailer",
        "hierarchyKey": 3
    }
}
```

Registering as customer would fail as operation is not allowed


POST -ve Scneario: Register a
PharmaNet: Blockchain Pharma Supply Chain / Register Entities / -ve Scneario: Register as a Consumer
POST
Params
Authorization
Headers (9)
Body ●
Pre-request Script
Tests ●
Settings
○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

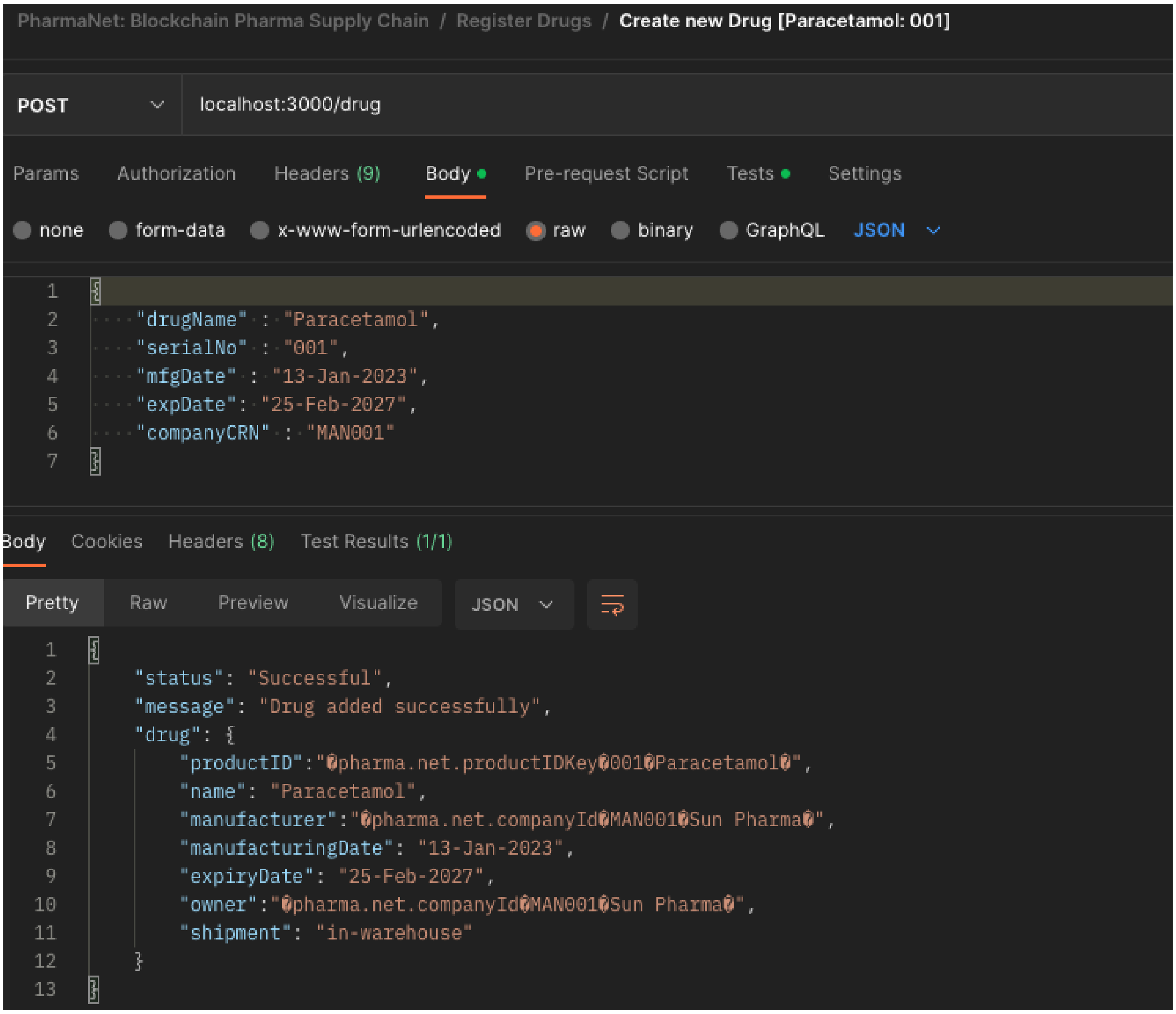
```
localhost:3000/company
```

```
{
    "companyCRN" : "CON001",
    "companyName" : "Ritam Das",
    "location" : "Kolkata",
    "organisationRole" : "Consumer"
}
```

```
{
    "status": "Failure",
    "message": "Error while registering the company",
    "error": "Organisation of type Consumer is not allowed to be regstered."
}
```

Registering Drugs

We will registering 3 drugs in total with name: Paracetamol with serial number 001,002 and 003 respectively. Initial shipment status will be `in-warehous`e with owner being the manufacting entity.


PharmaNet: Blockchain Pharma Supply Chain / Register Drugs / Create new Drug [Paracetamol: 001]
POST
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
○ none
○ form-data
○ x-www-form-urlencoded
● raw
○ binary
○ GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

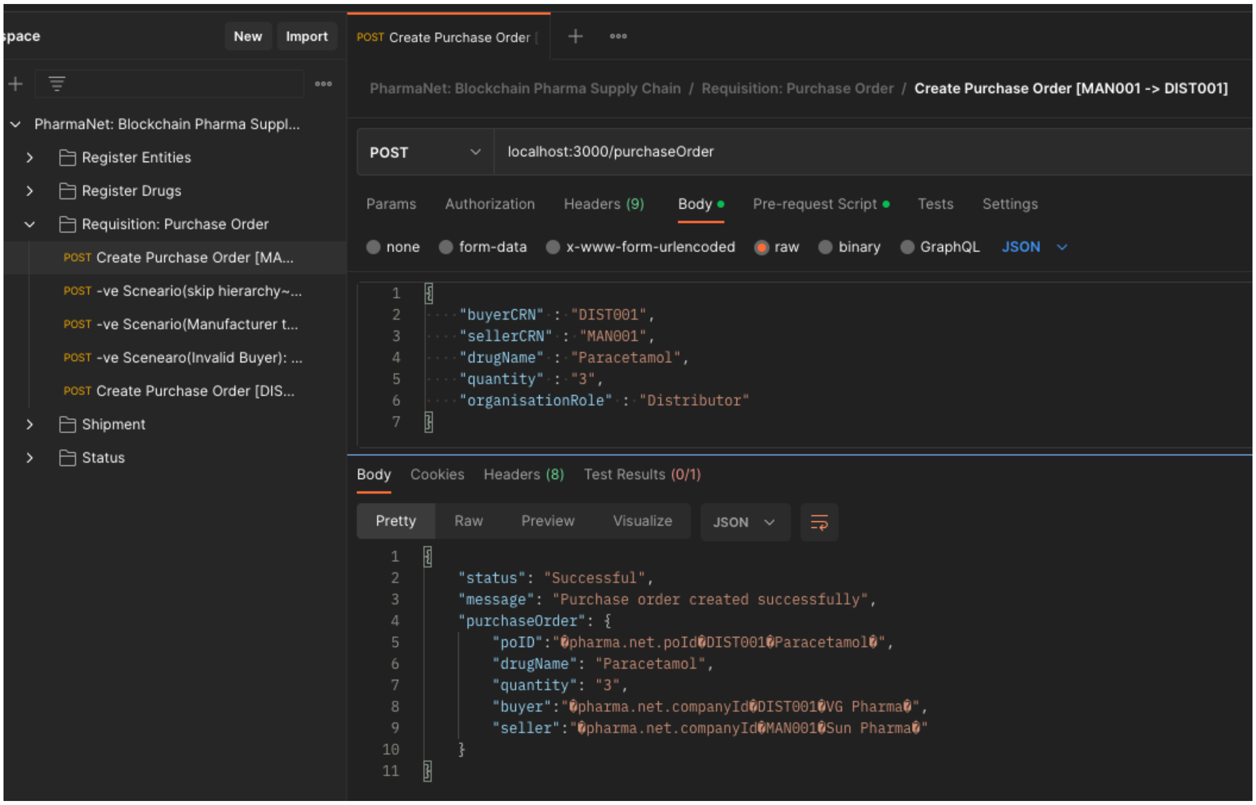
```
localhost:3000/drug
```

```
{
    "drugName" : "Paracetamol",
    "serialNo" : "001",
    "mfgDate" : "13-Jan-2023",
    "expDate": "25-Feb-2027",
    "companyCRN" : "MAN001"
}
```

```
{
    "status": "Successful",
    "message": "Drug added successfully",
    "drug": {
        "productID":"�pharma.net.productIDKey�001�Paracetamol�",
        "name": "Paracetamol",
        "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
        "manufacturingDate": "13-Jan-2023",
        "expiryDate": "25-Feb-2027",
        "owner":"�pharma.net.companyId�MAN001�Sun Pharma�",
        "shipment": "in-warehouse"
    }
}
```

Creating Purchase Order

Creating new PO request by buyer: DIST001 for seller: MAN001. Drug: Paracetamol | Qty: 3

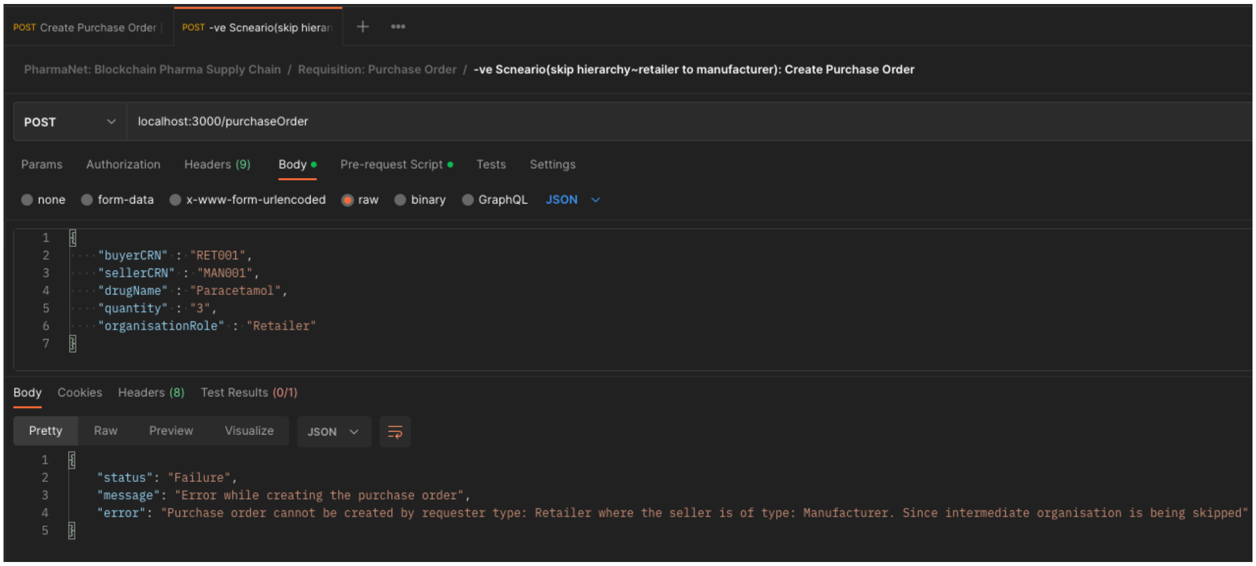

space
New
Import
PharmaNet: Blockchain Pharma Suppl...
Register Entities
Register Drugs
Requisition: Purchase Order
POST Create Purchase Order [MA...
POST -ve Scneario(skip hierarchy~...
POST -ve Scenario(Manufacturer t...
POST -ve Scenearo(Invalid Buyer): ...
POST Create Purchase Order [DIS...
Shipment
Status
POST Create Purchase Order [
PharmaNet: Blockchain Pharma Supply Chain / Requisition: Purchase Order / Create Purchase Order [MAN001 -> DIST001]
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (0/1)
Pretty
Raw
Preview
Visualize
JSON

```
POST localhost:3000/purchaseOrder
```

```
{
    "buyerCRN" : "DIST001",
    "sellerCRN" : "MAN001",
    "drugName" : "Paracetamol",
    "quantity" : "3",
    "organisationRole" : "Distributor"
}
```

```
{
    "status": "Successful",
    "message": "Purchase order created successfully",
    "purchaseOrder": {
        "poID":"�pharma.net.poId�DIST001�Paracetamol�",
        "drugName": "Paracetamol",
        "quantity": "3",
        "buyer":"�pharma.net.companyId�DIST001�VG Pharma�",
        "seller":"�pharma.net.companyId�MAN001�Sun Pharma�"
    }
}
```

PO creation fails when retailer tries to create PO to buy directly from manufacturer

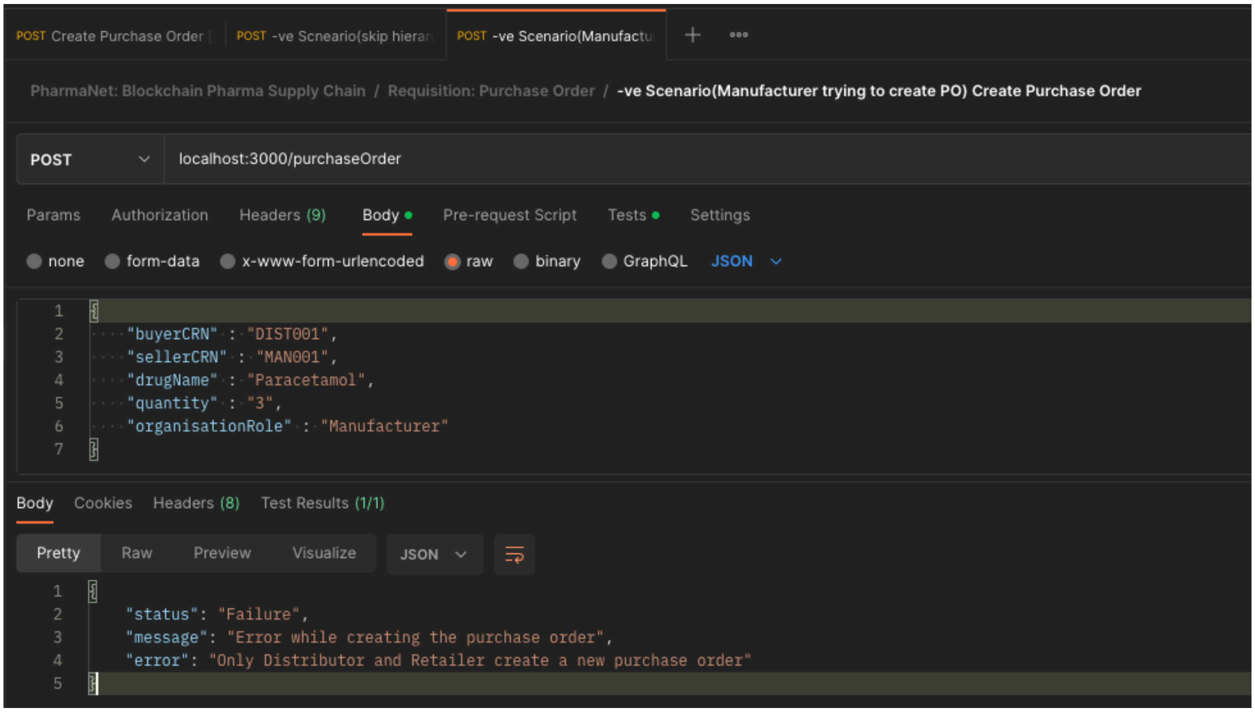

POST Create Purchase Order [
POST -ve Scneario(skip hierar
PharmaNet: Blockchain Pharma Supply Chain / Requisition: Purchase Order / -ve Scneario(skip hierarchy~retailer to manufacturer): Create Purchase Order
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (0/1)
Pretty
Raw
Preview
Visualize
JSON

```
POST localhost:3000/purchaseOrder
```

```
{
    "buyerCRN" : "RET001",
    "sellerCRN" : "MAN001",
    "drugName" : "Paracetamol",
    "quantity" : "3",
    "organisationRole" : "Retailer"
}
```

```
{
    "status": "Failure",
    "message": "Error while creating the purchase order",
    "error": "Purchase order cannot be created by requester type: Retailer where the seller is of type: Manufacturer. Since intermediate organisation is being skipped"
}
```

PO creation fails when manufacturer tries to create it.


POST Create Purchase Order (
POST -ve Scneario(skip hierar
POST -ve Scenario(Manufactu
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

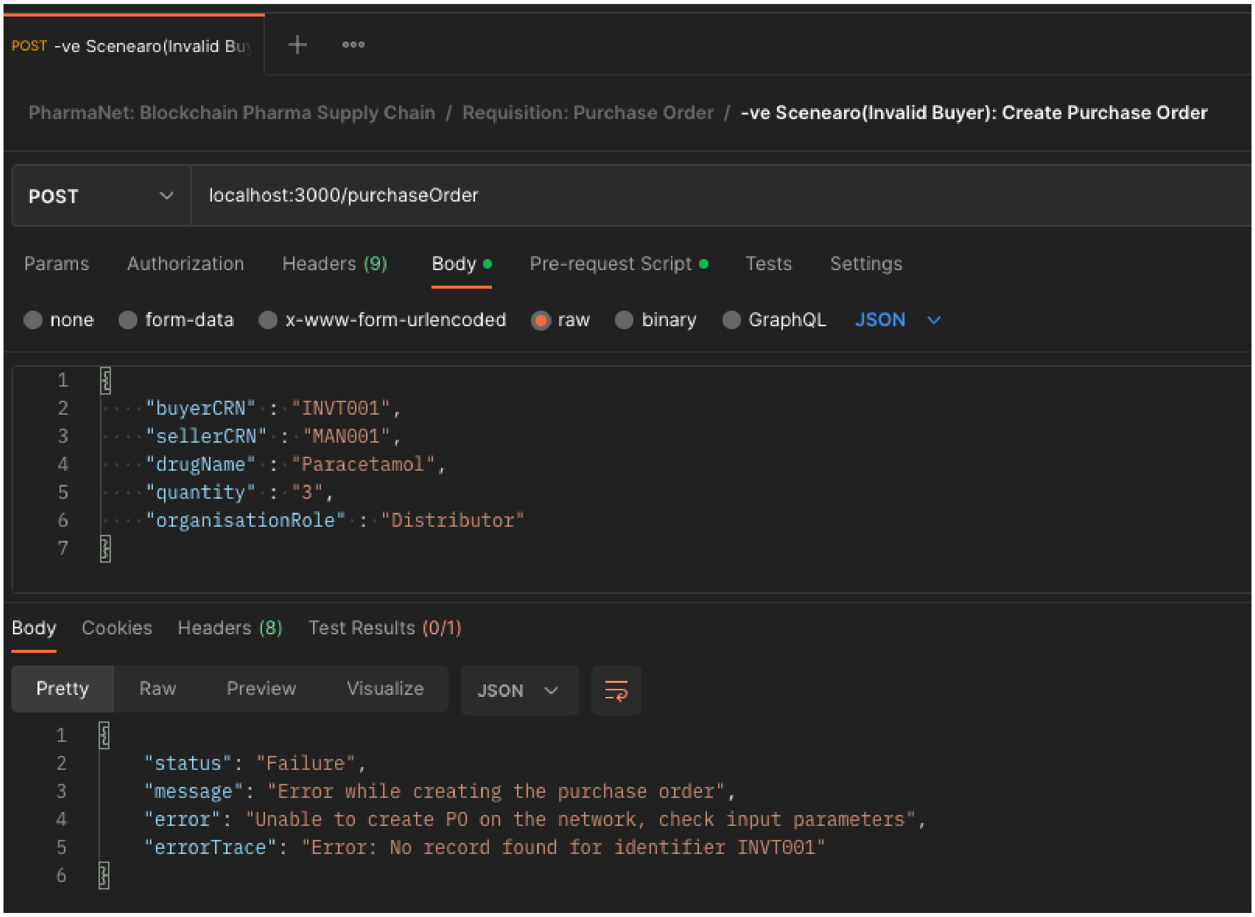
PharmaNet: Blockchain Pharma Supply Chain / Requisition: Purchase Order / -ve Scenario(Manufacturer trying to create PO) Create Purchase Order

POST localhost:3000/purchaseOrder

```
{
    "buyerCRN" : "DIST001",
    "sellerCRN" : "MAN001",
    "drugName" : "Paracetamol",
    "quantity" : "3",
    "organisationRole" : "Manufacturer"
}
```

```
{
    "status": "Failure",
    "message": "Error while creating the purchase order",
    "error": "Only Distributor and Retailer create a new purchase order"
}
```

PO Creation fails when buyer CRN is invalid


POST -ve Scenearo(Invalid Bu
PharmaNet: Blockchain Pharma Supply Chain / Requisition: Purchase Order / -ve Scenearo(Invalid Buyer): Create Purchase Order
POST
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
binary
GraphQL
Cookies
Headers (8)
Test Results (0/1)
Pretty
Raw
Preview
Visualize

POST localhost:3000/purchaseOrder

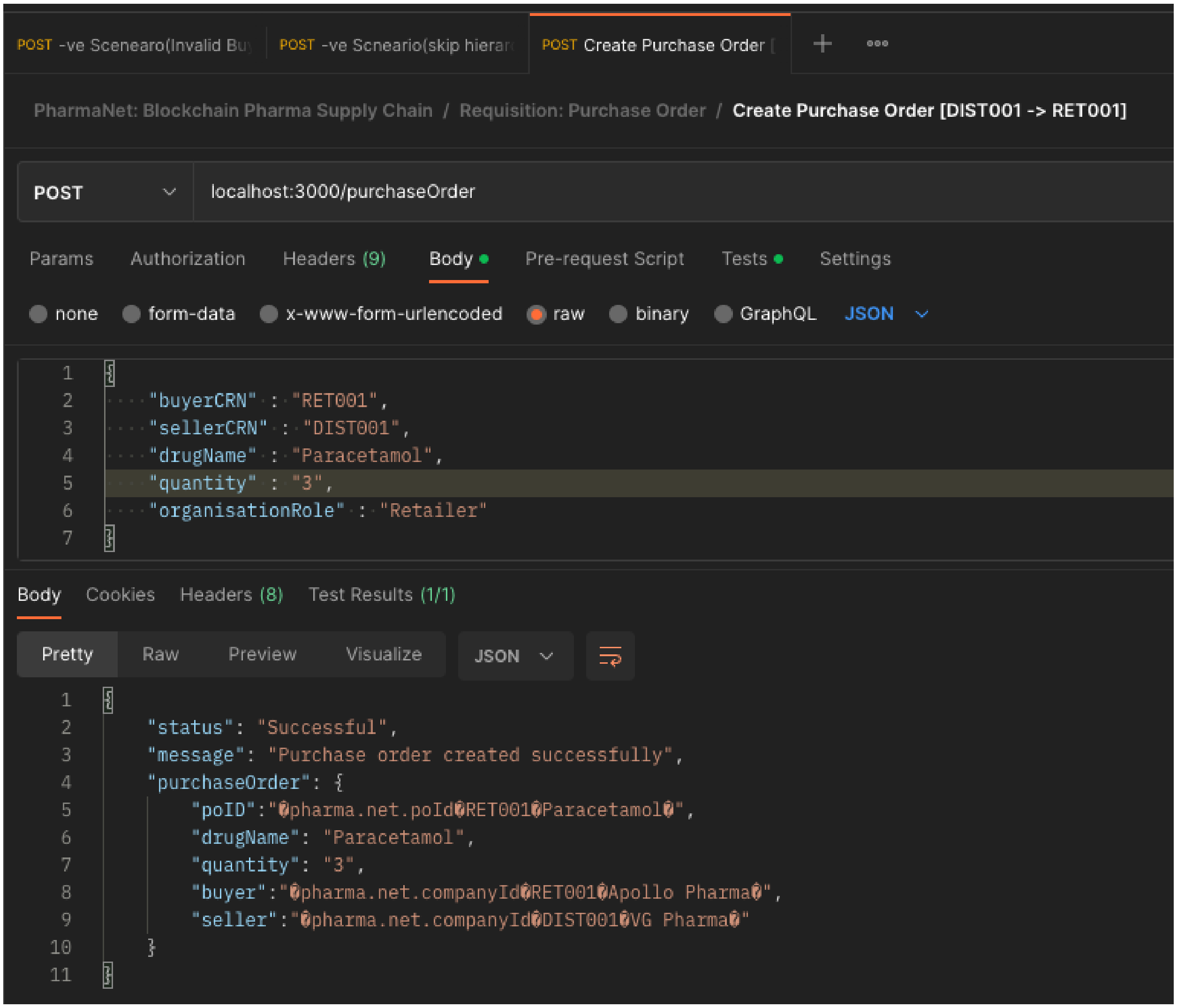
Body: ● raw JSON

```
{
    "buyerCRN" : "INVT001",
    "sellerCRN" : "MAN001",
    "drugName" : "Paracetamol",
    "quantity" : "3",
    "organisationRole" : "Distributor"
}
```

Body (Pretty, JSON):

```
{
    "status": "Failure",
    "message": "Error while creating the purchase order",
    "error": "Unable to create PO on the network, check input parameters",
    "errorTrace": "Error: No record found for identifier INVT001"
}
```

Another purchase order created, this time Retailer creates the PO for Distributor


POST -ve Scenearo(Invalid Bu
POST -ve Scneario(skip hierar
POST Create Purchase Order [
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

PharmaNet: Blockchain Pharma Supply Chain / Requisition: Purchase Order / Create Purchase Order [DIST001 -> RET001]

POST localhost:3000/purchaseOrder

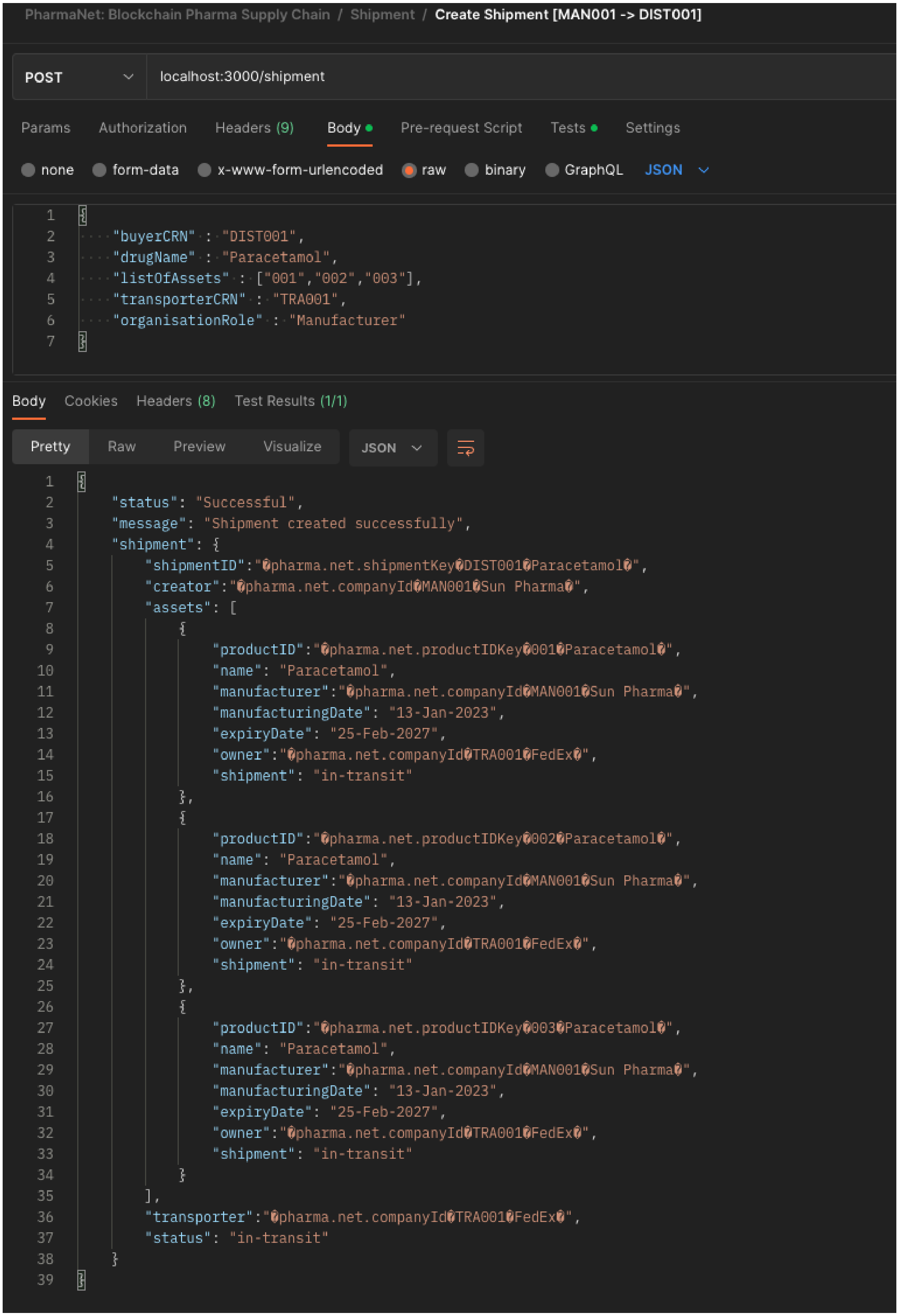
Body: ● raw JSON

```
{
    "buyerCRN" : "RET001",
    "sellerCRN" : "DIST001",
    "drugName" : "Paracetamol",
    "quantity" : "3",
    "organisationRole" : "Retailer"
}
```

```
{
    "status": "Successful",
    "message": "Purchase order created successfully",
    "purchaseOrder": {
        "poID":"�pharma.net.poId�RET001�Paracetamol�",
        "drugName": "Paracetamol",
        "quantity": "3",
        "buyer":"�pharma.net.companyId�RET001�Apollo Pharma�",
        "seller":"�pharma.net.companyId�DIST001�VG Pharma�"
    }
}
```

Creation of Shipment

Manufacturer created a shipment for distributor for the requested drugs. Status of the shipment is `in-transit` and owner of the drugs are currently the transport company.

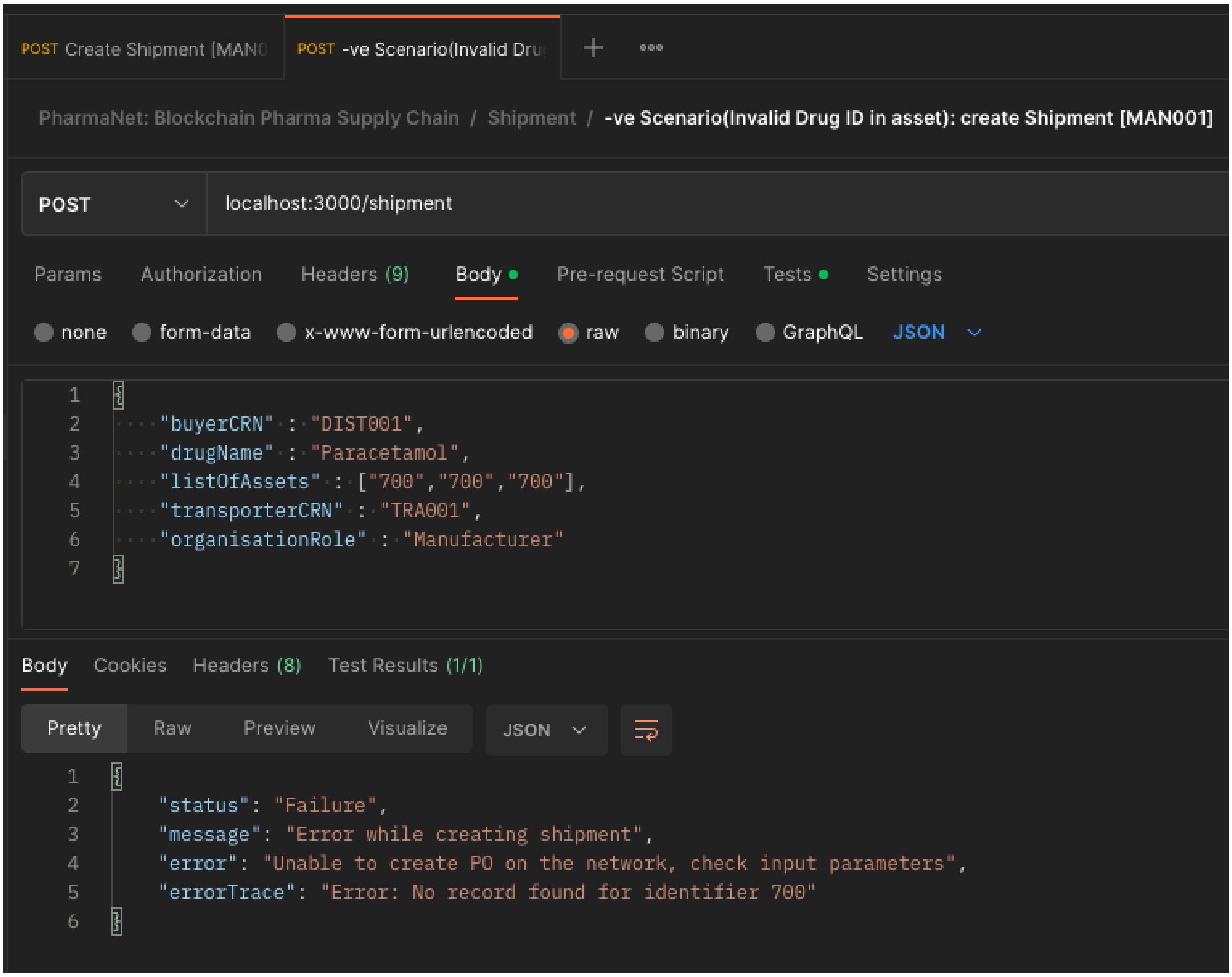

PharmaNet: Blockchain Pharma Supply Chain / Shipment / Create Shipment [MAN001 -> DIST001]
POST
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
○ none
○ form-data
○ x-www-form-urlencoded
● raw
○ binary
○ GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

POST localhost:3000/shipment

```
{
    "buyerCRN" : "DIST001",
    "drugName" : "Paracetamol",
    "listOfAssets" : ["001","002","003"],
    "transporterCRN" : "TRA001",
    "organisationRole" : "Manufacturer"
}
```

```
{
    "status": "Successful",
    "message": "Shipment created successfully",
    "shipment": {
        "shipmentID":"�pharma.net.shipmentKey�DIST001�Paracetamol�",
        "creator":"�pharma.net.companyId�MAN001�Sun Pharma�",
        "assets": [
            {
                "productID":"�pharma.net.productIDKey�001�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�TRA001�FedEx�",
                "shipment": "in-transit"
            },
            {
                "productID":"�pharma.net.productIDKey�002�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�TRA001�FedEx�",
                "shipment": "in-transit"
            },
            {
                "productID":"�pharma.net.productIDKey�003�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�TRA001�FedEx�",
                "shipment": "in-transit"
            }
        ],
        "transporter":"�pharma.net.companyId�TRA001�FedEx�",
        "status": "in-transit"
    }
}
```

Shipment creation fails when drug IDs mentioned in the shipment doesn't exist

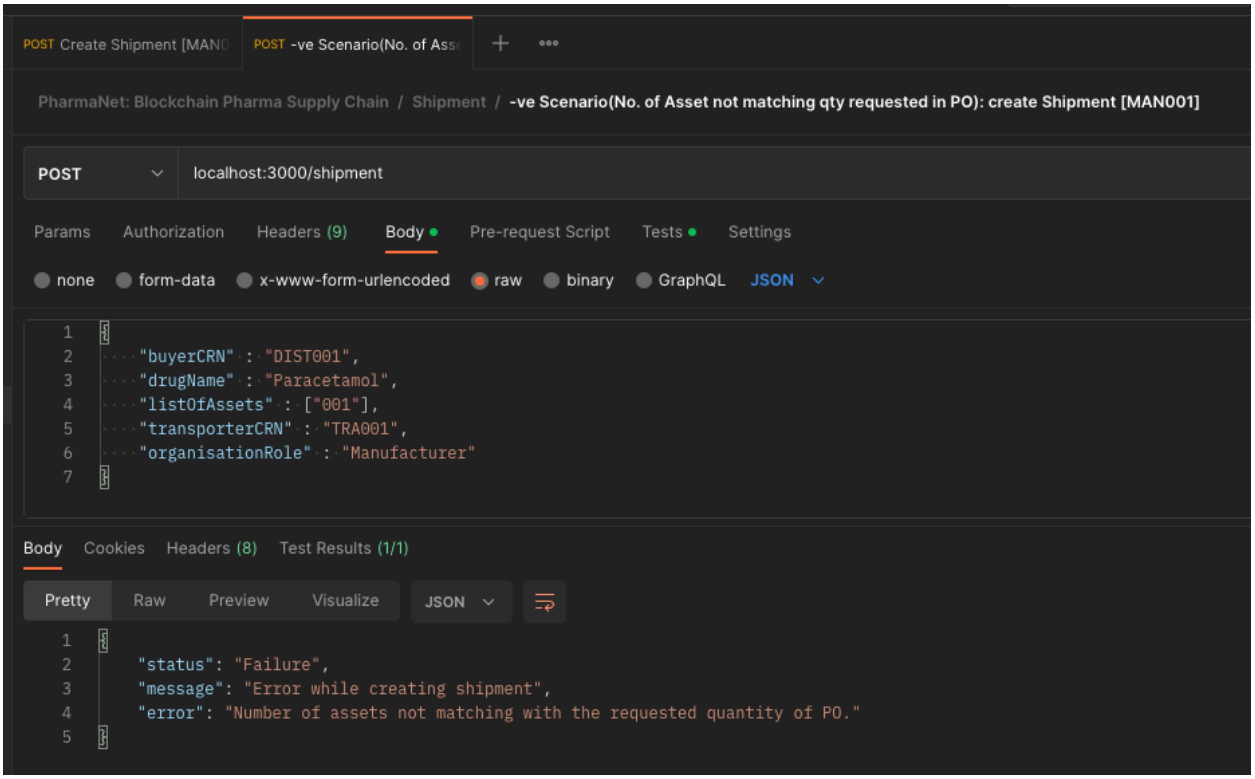

POST Create Shipment [MANO
POST -ve Scenario(Invalid Dru
PharmaNet: Blockchain Pharma Supply Chain / Shipment / -ve Scenario(Invalid Drug ID in asset): create Shipment [MAN001]
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

POST localhost:3000/shipment

```
{
    "buyerCRN" : "DIST001",
    "drugName" : "Paracetamol",
    "listOfAssets" : ["700","700","700"],
    "transporterCRN" : "TRA001",
    "organisationRole" : "Manufacturer"
}
```

```
{
    "status": "Failure",
    "message": "Error while creating shipment",
    "error": "Unable to create PO on the network, check input parameters",
    "errorTrace": "Error: No record found for identifier 700"
}
```

Shipment creation fails when number of qty in shipment doesn't match with qty requested through PO


POST Create Shipment [MAN0
POST -ve Scenario(No. of Ass
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
○ none
○ form-data
○ x-www-form-urlencoded
● raw
○ binary
○ GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

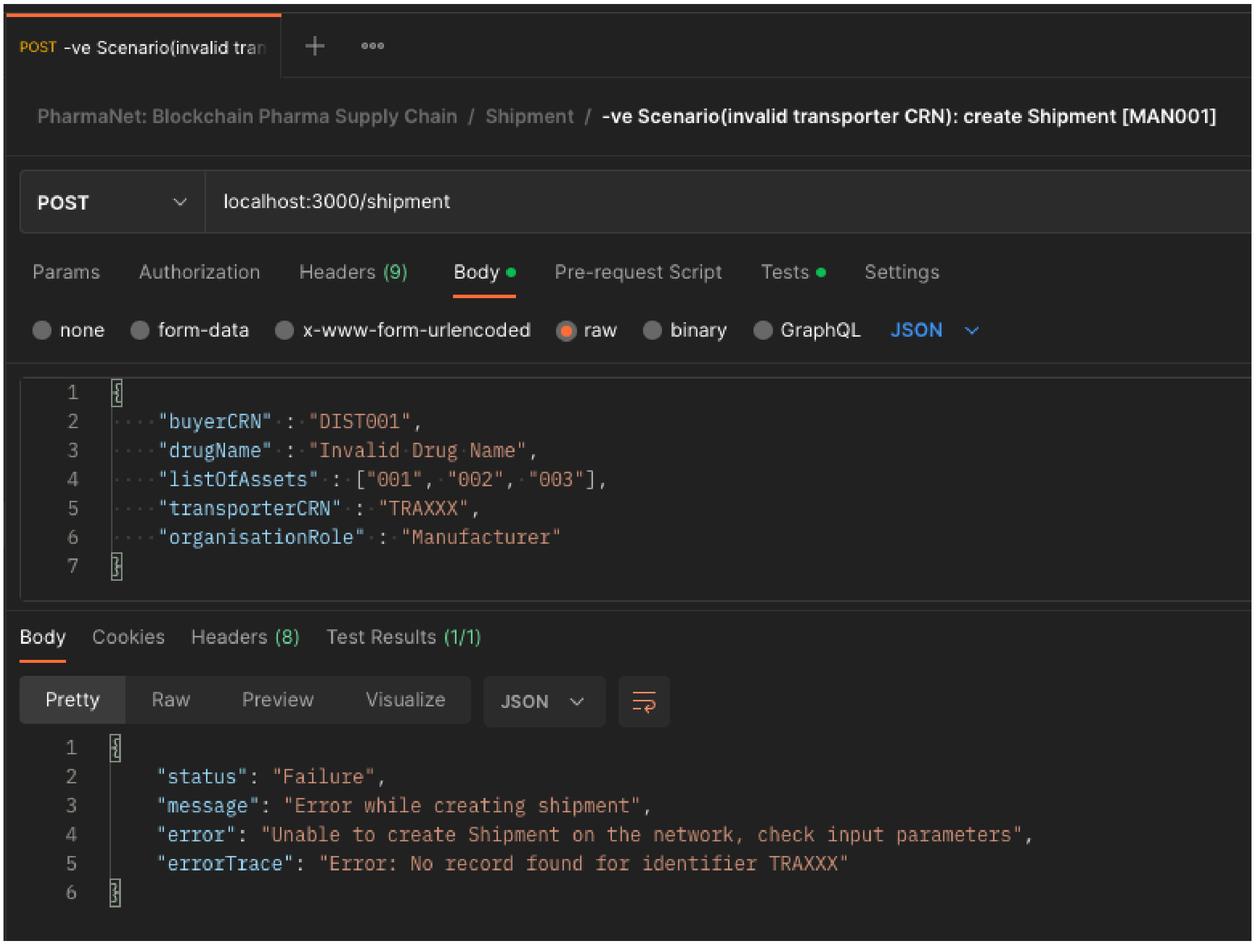
PharmaNet: Blockchain Pharma Supply Chain / Shipment / -ve Scenario(No. of Asset not matching qty requested in PO): create Shipment [MAN001]

POST localhost:3000/shipment

```
{
    "buyerCRN" : "DIST001",
    "drugName" : "Paracetamol",
    "listOfAssets" : ["001"],
    "transporterCRN" : "TRA001",
    "organisationRole" : "Manufacturer"
}
```

```
{
    "status": "Failure",
    "message": "Error while creating shipment",
    "error": "Number of assets not matching with the requested quantity of PO."
}
```

Shipment creation fails when transporter CRN is invalid


POST -ve Scenario(invalid tran
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
○ none
○ form-data
○ x-www-form-urlencoded
● raw
○ binary
○ GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

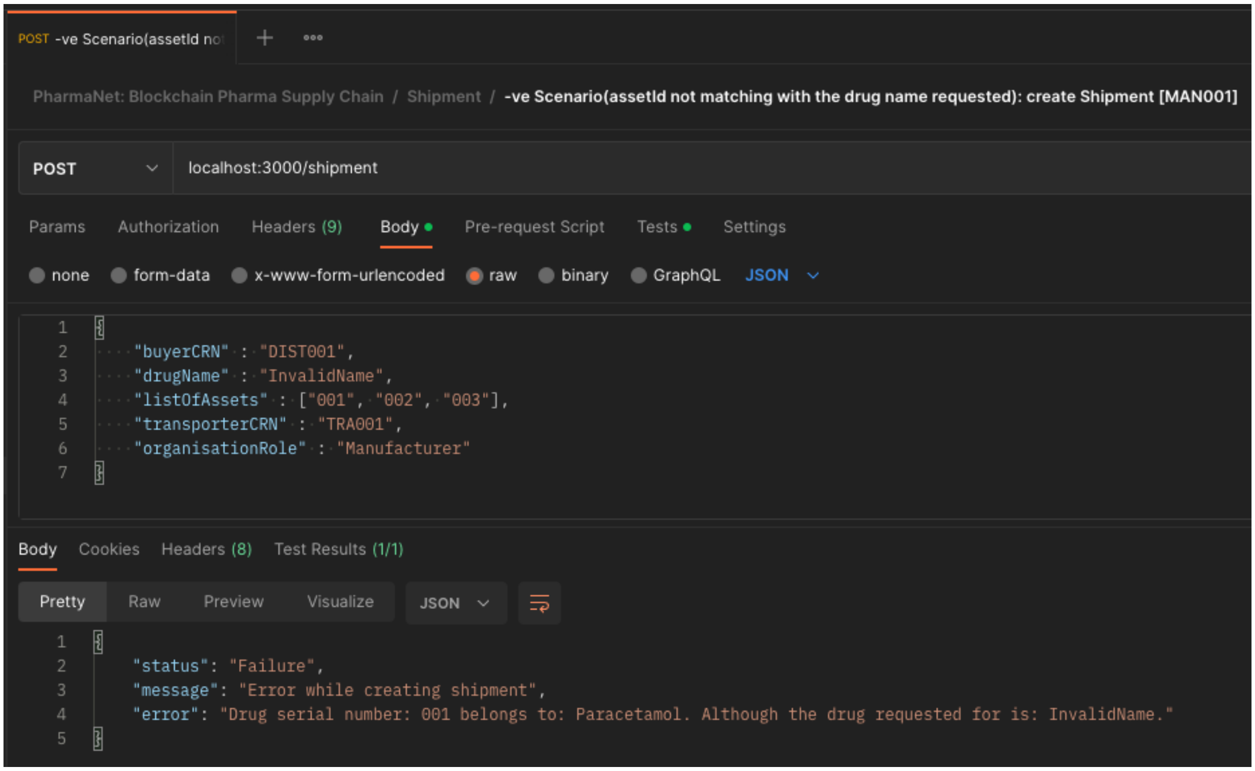
PharmaNet: Blockchain Pharma Supply Chain / Shipment / -ve Scenario(invalid transporter CRN): create Shipment [MAN001]

POST localhost:3000/shipment

```
{
    "buyerCRN" : "DIST001",
    "drugName" : "Invalid Drug Name",
    "listOfAssets" : ["001", "002", "003"],
    "transporterCRN" : "TRAXXX",
    "organisationRole" : "Manufacturer"
}
```

```
{
    "status": "Failure",
    "message": "Error while creating shipment",
    "error": "Unable to create Shipment on the network, check input parameters",
    "errorTrace": "Error: No record found for identifier TRAXXX"
}
```

Shipment creation fails when drugName and asset ID doesn’t match


POST -ve Scenario(assetId no
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

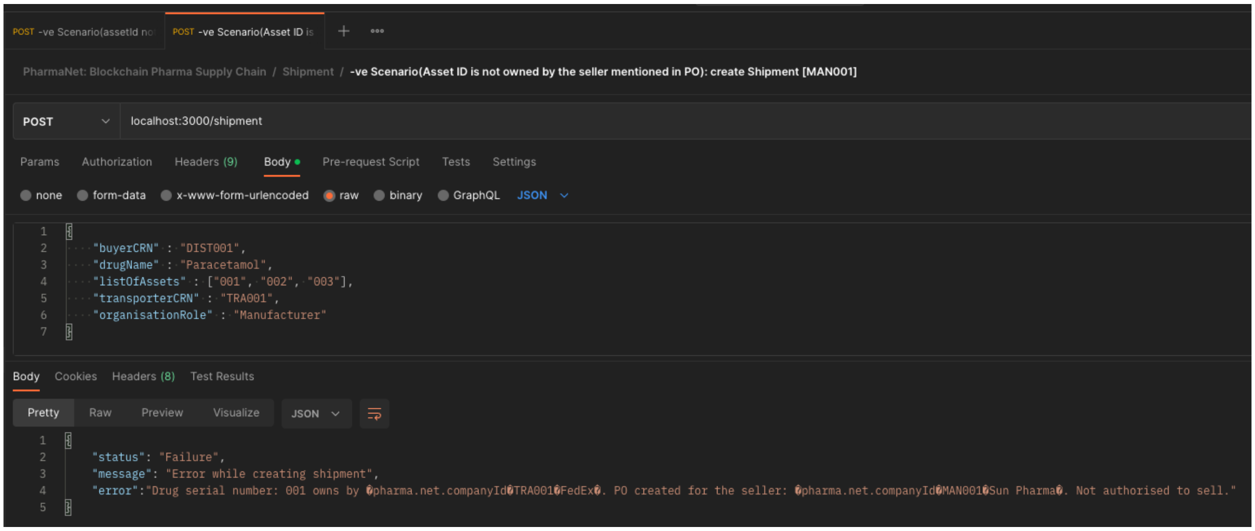
PharmaNet: Blockchain Pharma Supply Chain / Shipment / -ve Scenario(assetId not matching with the drug name requested): create Shipment [MAN001]

POST localhost:3000/shipment

```
{
    "buyerCRN" : "DIST001",
    "drugName" : "InvalidName",
    "listOfAssets" : ["001", "002", "003"],
    "transporterCRN" : "TRA001",
    "organisationRole" : "Manufacturer"
}
```

```
{
    "status": "Failure",
    "message": "Error while creating shipment",
    "error": "Drug serial number: 001 belongs to: Paracetamol. Although the drug requested for is: InvalidName."
}
```

Shipment cannot be created by manufacturer when the asset is not owned by them.


POST -ve Scenario(assetId no
POST -ve Scenario(Asset ID is
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Body
Cookies
Headers (8)
Test Results
Pretty
Raw
Preview
Visualize
JSON

PharmaNet: Blockchain Pharma Supply Chain / Shipment / -ve Scenario(Asset ID is not owned by the seller mentioned in PO): create Shipment [MAN001]

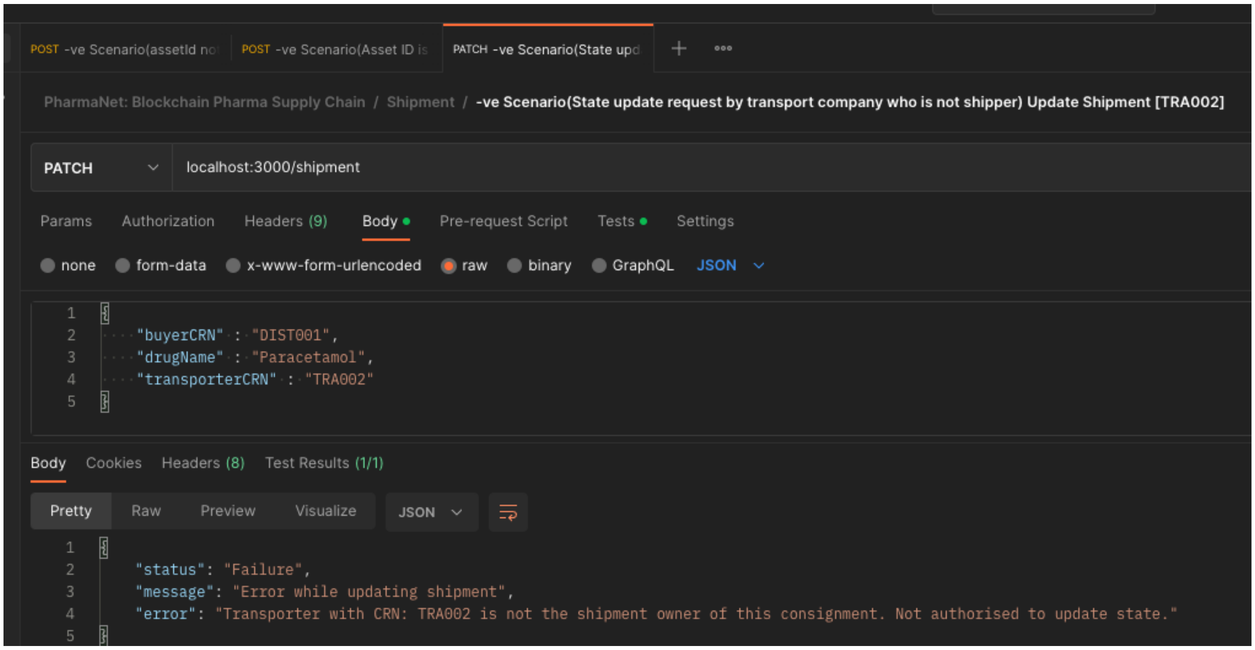
POST localhost:3000/shipment

```
{
    "buyerCRN" : "DIST001",
    "drugName" : "Paracetamol",
    "listOfAssets" : ["001", "002", "003"],
    "transporterCRN" : "TRA001",
    "organisationRole" : "Manufacturer"
}
```

```
{
    "status": "Failure",
    "message": "Error while creating shipment",
    "error":"Drug serial number: 001 owns by �pharma.net.companyId�TRA001�FedEx�. PO created for the seller: �pharma.net.companyId�MAN001�Sun Pharma�. Not authorised to sell."
}
```

Update Shipment

Shipment cannot be updated by Transport company(TRA002) who is not shipping the product


POST -ve Scenario(assetId no
POST -ve Scenario(Asset ID is
PATCH -ve Scenario(State upd
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize

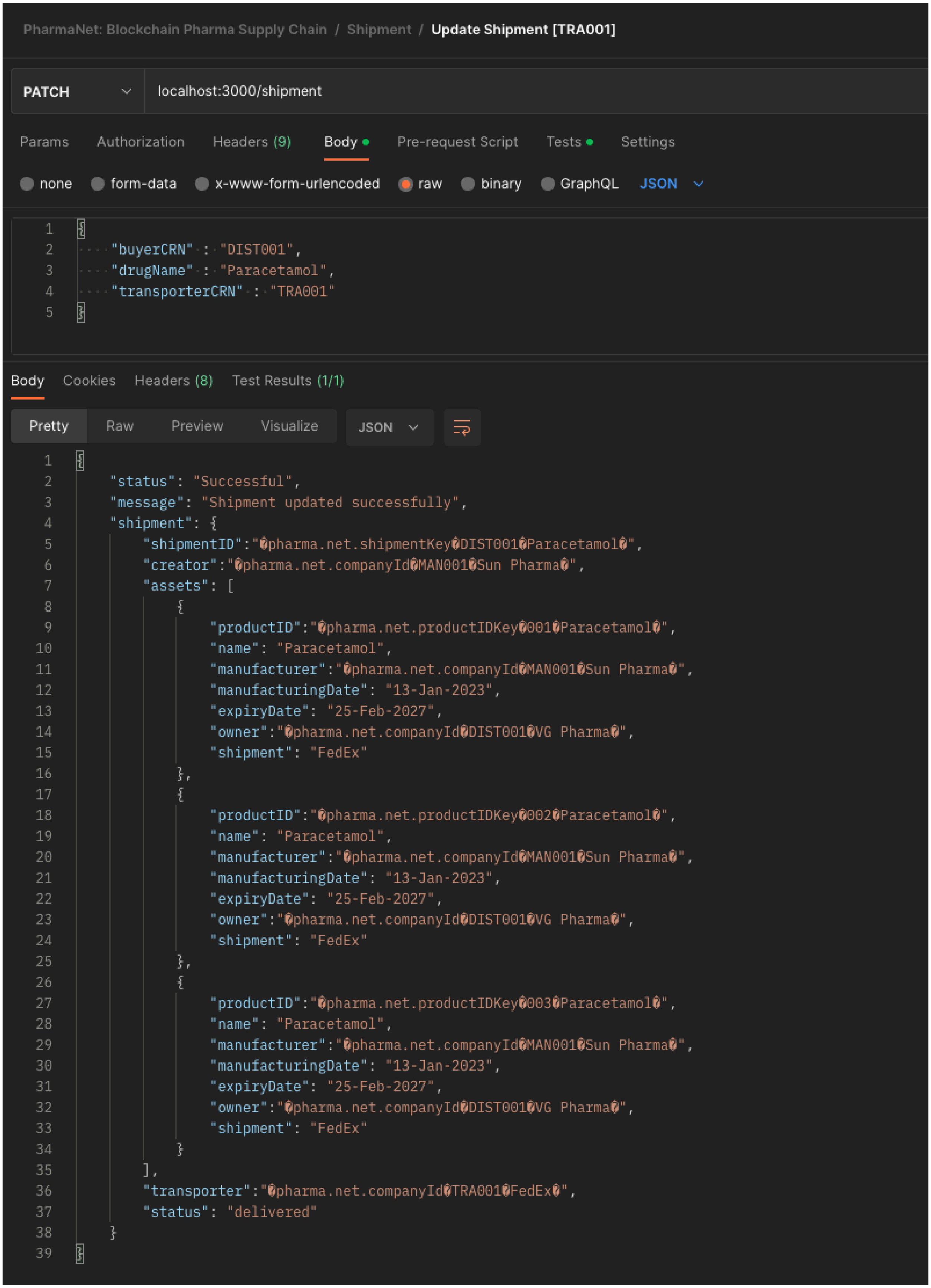
PharmaNet: Blockchain Pharma Supply Chain / Shipment / -ve Scenario(State update request by transport company who is not shipper) Update Shipment [TRA002]

PATCH localhost:3000/shipment

```
{
    "buyerCRN" : "DIST001",
    "drugName" : "Paracetamol",
    "transporterCRN" : "TRA002"
}
```

```
{
    "status": "Failure",
    "message": "Error while updating shipment",
    "error": "Transporter with CRN: TRA002 is not the shipment owner of this consignment. Not authorised to update state."
}
```

Shipment updated by Transport company to mark it delivered to the buyer of the drug. See, the owner of each drug is not updated buyer company, and shipment status changed to delivered.



PharmaNet: Blockchain Pharma Supply Chain / Shipment / **Update Shipment [TRA001]**

PATCH localhost:3000/shipment

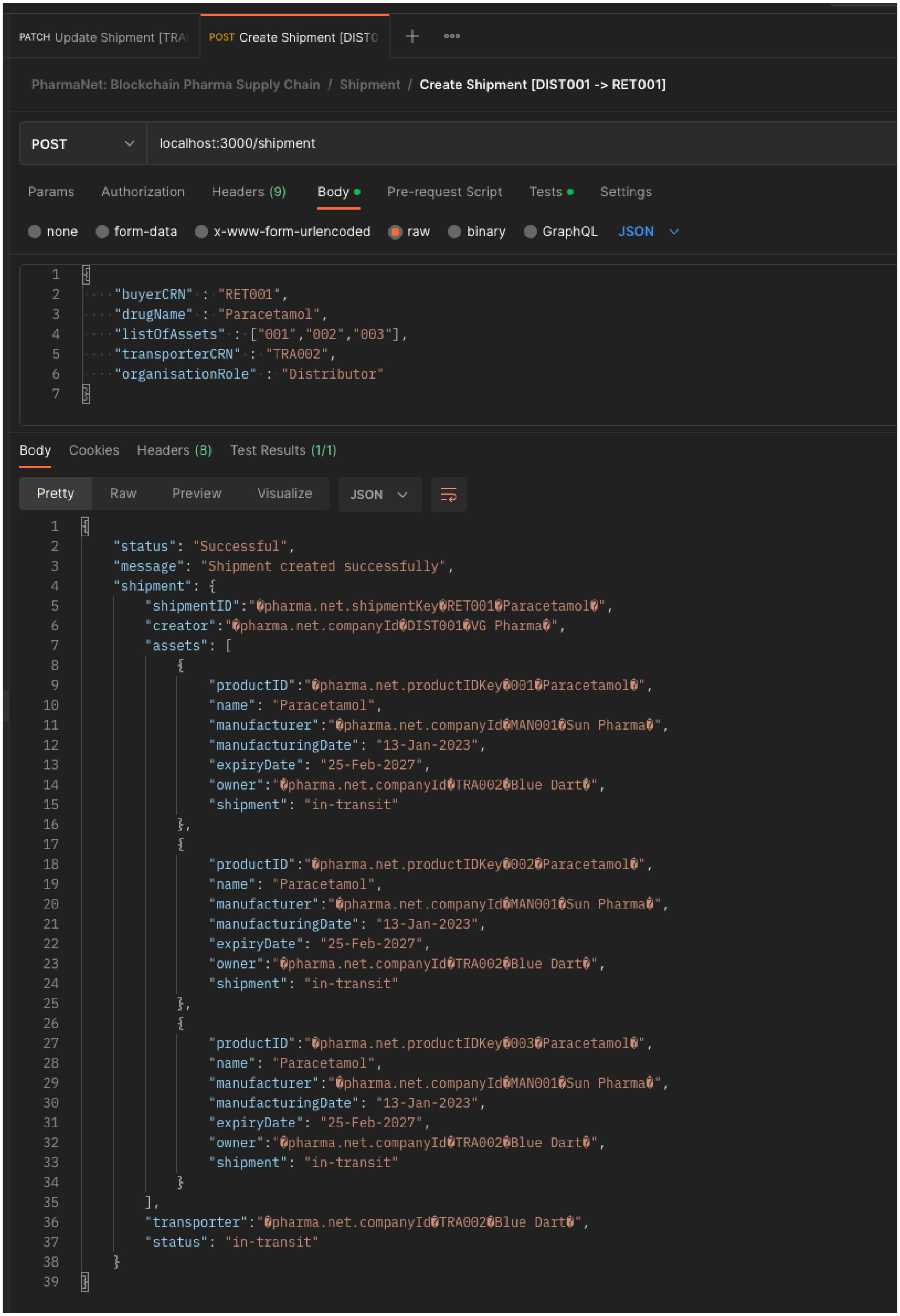
Body: ○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON

```
{
    "buyerCRN" : "DIST001",
    "drugName" : "Paracetamol",
    "transporterCRN" : "TRA001"
}
```

Body — Pretty — JSON

```
{
    "status": "Successful",
    "message": "Shipment updated successfully",
    "shipment": {
        "shipmentID":"�pharma.net.shipmentKey�DIST001�Paracetamol�",
        "creator":"�pharma.net.companyId�MAN001�Sun Pharma�",
        "assets": [
            {
                "productID":"�pharma.net.productIDKey�001�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�DIST001�VG Pharma�",
                "shipment": "FedEx"
            },
            {
                "productID":"�pharma.net.productIDKey�002�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�DIST001�VG Pharma�",
                "shipment": "FedEx"
            },
            {
                "productID":"�pharma.net.productIDKey�003�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�DIST001�VG Pharma�",
                "shipment": "FedEx"
            }
        ],
        "transporter":"�pharma.net.companyId�TRA001�FedEx�",
        "status": "delivered"
    }
}
```

Distributor shipping the drugs to retailer

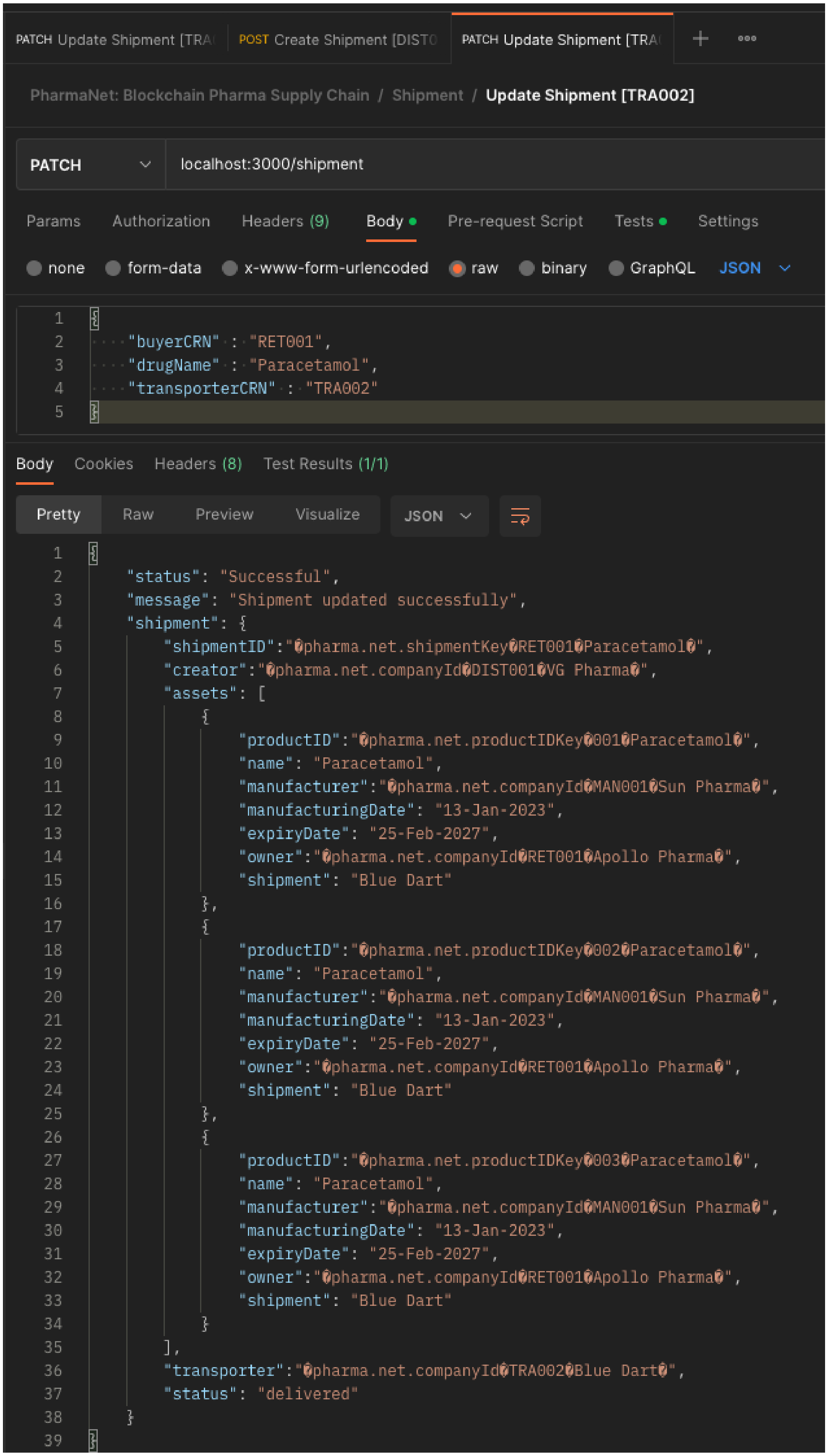

PATCH Update Shipment [TRA
POST Create Shipment [DIST0
PharmaNet: Blockchain Pharma Supply Chain / Shipment / Create Shipment [DIST001 -> RET001]
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

POST localhost:3000/shipment

```
{
    "buyerCRN" : "RET001",
    "drugName" : "Paracetamol",
    "listOfAssets" : ["001","002","003"],
    "transporterCRN" : "TRA002",
    "organisationRole" : "Distributor"
}
```

```
{
    "status": "Successful",
    "message": "Shipment created successfully",
    "shipment": {
        "shipmentID":"�pharma.net.shipmentKey�RET001�Paracetamol�",
        "creator":"�pharma.net.companyId�DIST001�VG Pharma�",
        "assets": [
            {
                "productID":"�pharma.net.productIDKey�001�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�TRA002�Blue Dart�",
                "shipment": "in-transit"
            },
            {
                "productID":"�pharma.net.productIDKey�002�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�TRA002�Blue Dart�",
                "shipment": "in-transit"
            },
            {
                "productID":"�pharma.net.productIDKey�003�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�TRA002�Blue Dart�",
                "shipment": "in-transit"
            }
        ],
        "transporter":"�pharma.net.companyId�TRA002�Blue Dart�",
        "status": "in-transit"
    }
}
```

Shipment Delivered to retailer


PATCH Update Shipment [TRA
POST Create Shipment [DISTO
PATCH Update Shipment [TRA
PharmaNet: Blockchain Pharma Supply Chain / Shipment / Update Shipment [TRA002]
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize

PATCH localhost:3000/shipment

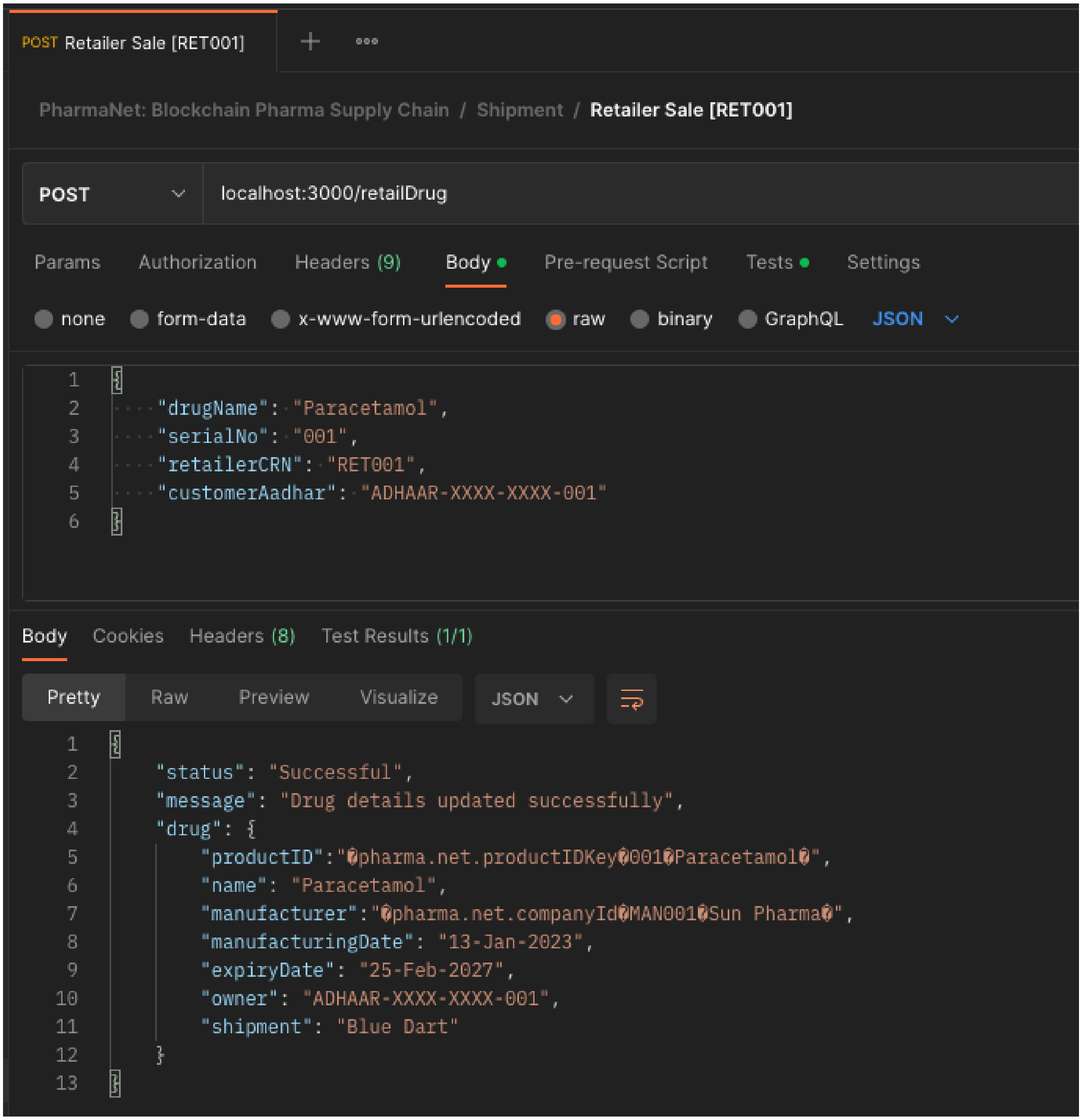
Body: ○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON

```
{
    "buyerCRN" : "RET001",
    "drugName" : "Paracetamol",
    "transporterCRN" : "TRA002"
}
```

Body: Pretty JSON

```
{
    "status": "Successful",
    "message": "Shipment updated successfully",
    "shipment": {
        "shipmentID":"�pharma.net.shipmentKey�RET001�Paracetamol�",
        "creator":"�pharma.net.companyId�DIST001�VG Pharma�",
        "assets": [
            {
                "productID":"�pharma.net.productIDKey�001�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�RET001�Apollo Pharma�",
                "shipment": "Blue Dart"
            },
            {
                "productID":"�pharma.net.productIDKey�002�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�RET001�Apollo Pharma�",
                "shipment": "Blue Dart"
            },
            {
                "productID":"�pharma.net.productIDKey�003�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�RET001�Apollo Pharma�",
                "shipment": "Blue Dart"
            }
        ],
        "transporter":"�pharma.net.companyId�TRA002�Blue Dart�",
        "status": "delivered"
    }
}
```

Retail Sell


POST Retailer Sale [RET001]
PharmaNet: Blockchain Pharma Supply Chain / Shipment / Retailer Sale [RET001]
POST
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

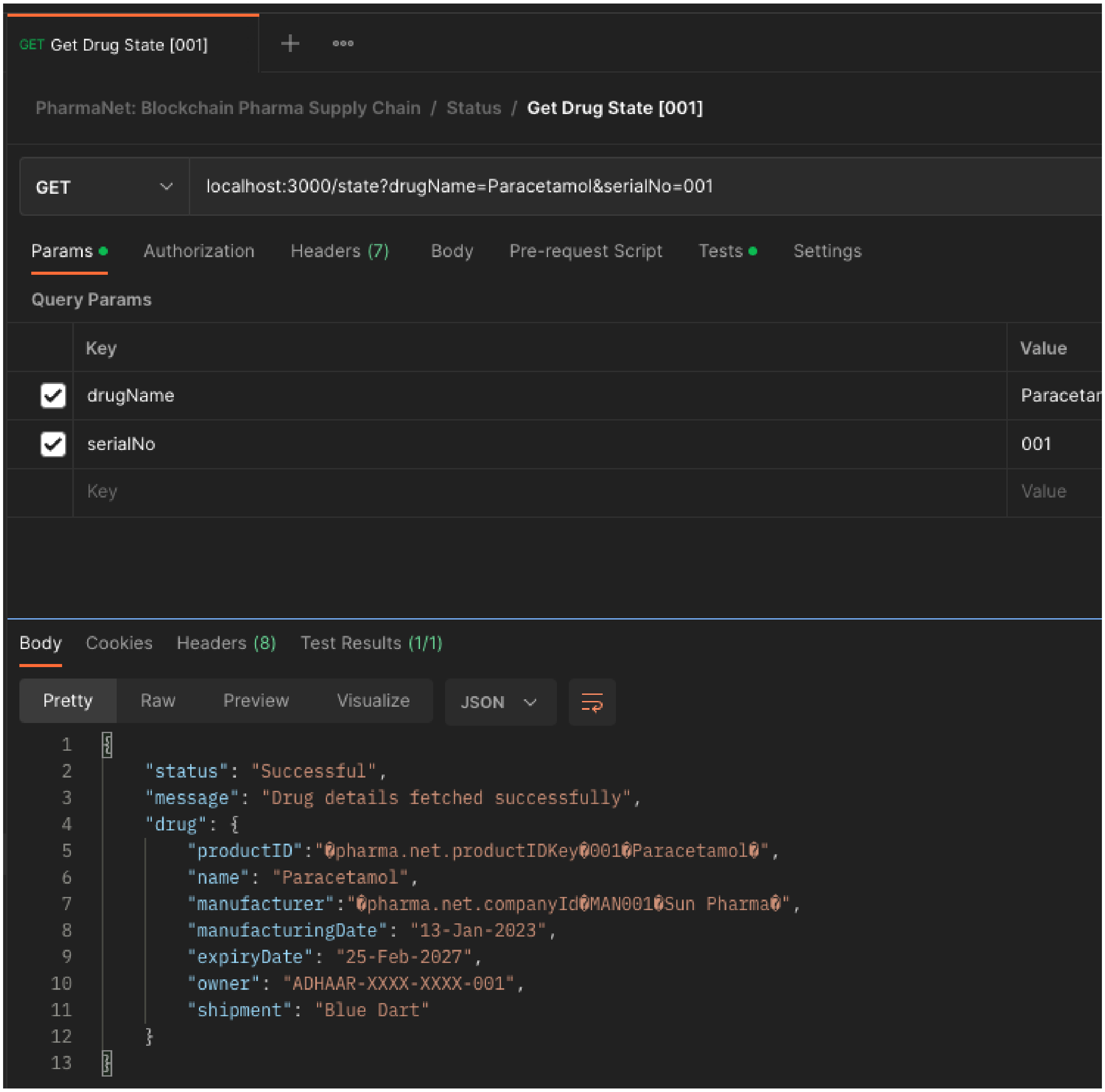
POST localhost:3000/retailDrug

```
{
    "drugName": "Paracetamol",
    "serialNo": "001",
    "retailerCRN": "RET001",
    "customerAadhar": "ADHAAR-XXXX-XXXX-001"
}
```

```
{
    "status": "Successful",
    "message": "Drug details updated successfully",
    "drug": {
        "productID":"�pharma.net.productIDKey�001�Paracetamol�",
        "name": "Paracetamol",
        "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
        "manufacturingDate": "13-Jan-2023",
        "expiryDate": "25-Feb-2027",
        "owner": "ADHAAR-XXXX-XXXX-001",
        "shipment": "Blue Dart"
    }
}
```

Check Status

Get the current status for Drug 001


GET Get Drug State [001]
Params
Authorization
Headers (7)
Body
Pre-request Script
Tests
Settings
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

PharmaNet: Blockchain Pharma Supply Chain / Status / **Get Drug State [001]**

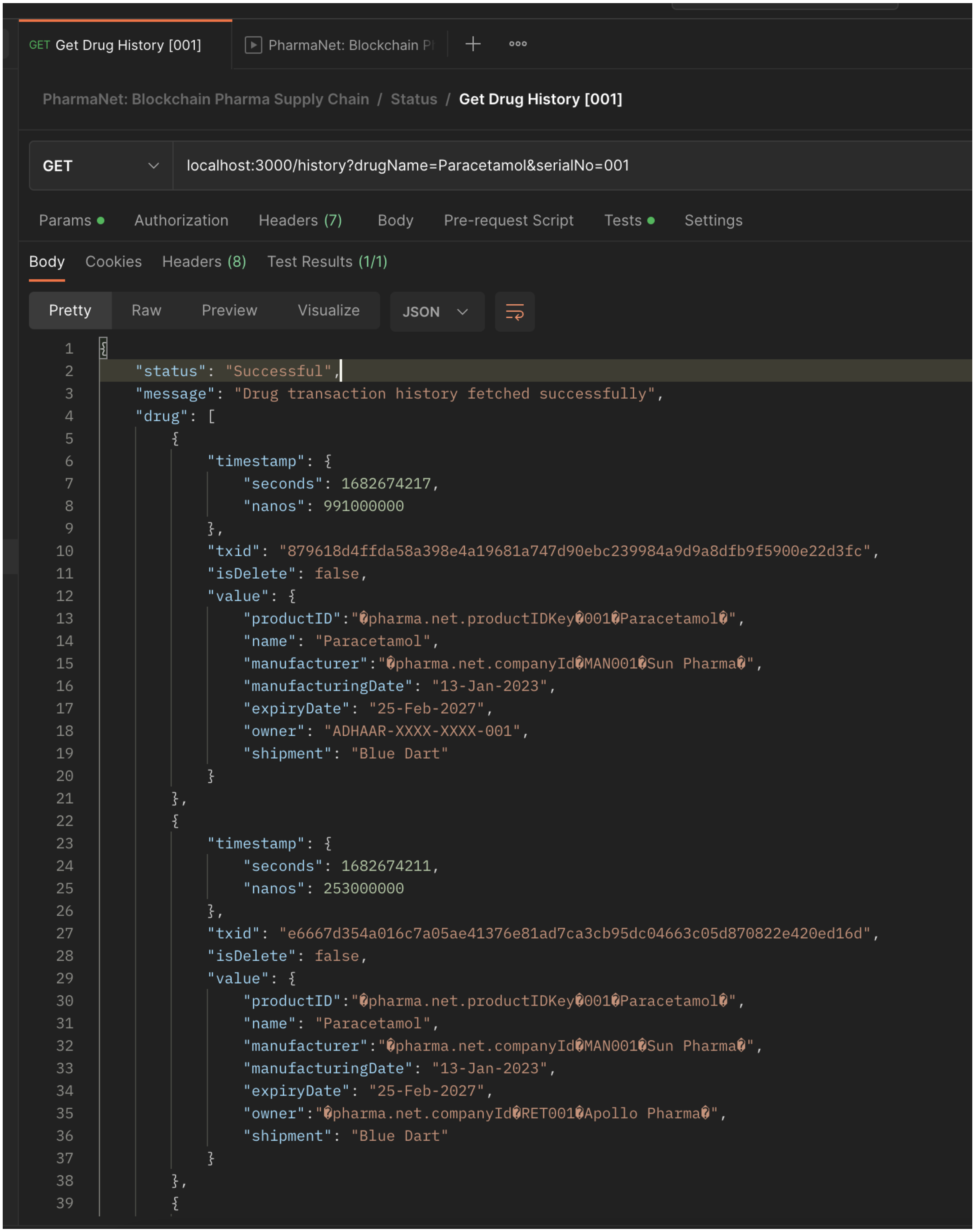
GET `localhost:3000/state?drugName=Paracetamol&serialNo=001`

Query Params

	Key	Value
☑	drugName	Paracetar
☑	serialNo	001
	Key	Value

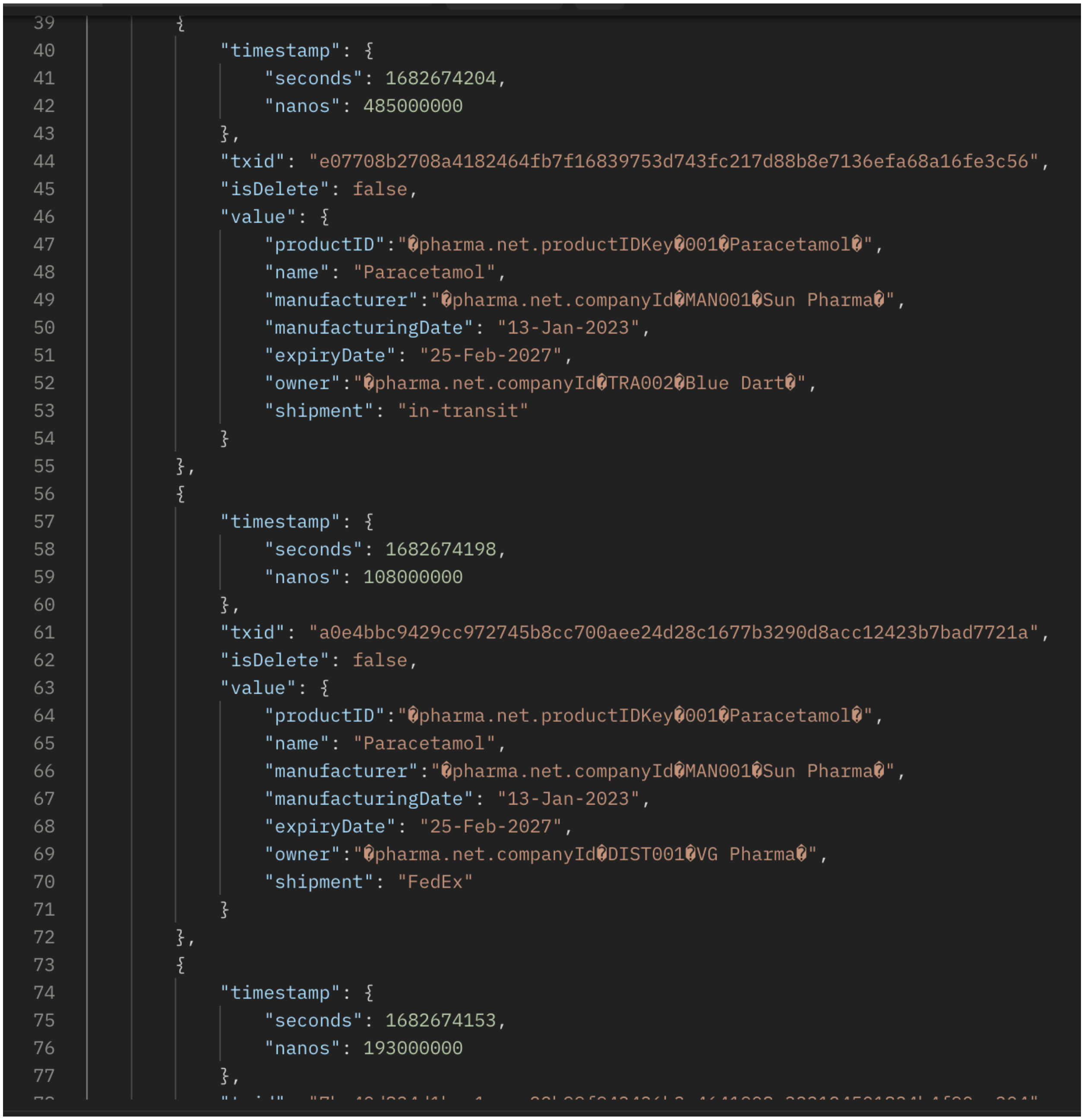
```
{
    "status": "Successful",
    "message": "Drug details fetched successfully",
    "drug": {
        "productID":"�pharma.net.productIDKey�001�Paracetamol�",
        "name": "Paracetamol",
        "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
        "manufacturingDate": "13-Jan-2023",
        "expiryDate": "25-Feb-2027",
        "owner": "ADHAAR-XXXX-XXXX-001",
        "shipment": "Blue Dart"
    }
}
```

Get whole history of the drug 001


GET Get Drug History [001]
PharmaNet: Blockchain Pl
PharmaNet: Blockchain Pharma Supply Chain / Status / Get Drug History [001]
GET
Params ●
Authorization
Headers (7)
Body
Pre-request Script
Tests ●
Settings
Body
Cookies
Headers (8)
Test Results (1/1)
Pretty
Raw
Preview
Visualize
JSON

localhost:3000/history?drugName=Paracetamol&serialNo=001

```
{
    "status": "Successful",
    "message": "Drug transaction history fetched successfully",
    "drug": [
        {
            "timestamp": {
                "seconds": 1682674217,
                "nanos": 991000000
            },
            "txid": "879618d4ffda58a398e4a19681a747d90ebc239984a9d9a8dfb9f5900e22d3fc",
            "isDelete": false,
            "value": {
                "productID":"�pharma.net.productIDKey�001�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner": "ADHAAR-XXXX-XXXX-001",
                "shipment": "Blue Dart"
            }
        },
        {
            "timestamp": {
                "seconds": 1682674211,
                "nanos": 253000000
            },
            "txid": "e6667d354a016c7a05ae41376e81ad7ca3cb95dc04663c05d870822e420ed16d",
            "isDelete": false,
            "value": {
                "productID":"�pharma.net.productIDKey�001�Paracetamol�",
                "name": "Paracetamol",
                "manufacturer":"�pharma.net.companyId�MAN001�Sun Pharma�",
                "manufacturingDate": "13-Jan-2023",
                "expiryDate": "25-Feb-2027",
                "owner":"�pharma.net.companyId�RET001�Apollo Pharma�",
                "shipment": "Blue Dart"
            }
        },
        {
```



```
            {
                "timestamp": {
                    "seconds": 1682674204,
                    "nanos": 485000000
                },
                "txid": "e07708b2708a4182464fb7f16839753d743fc217d88b8e7136efa68a16fe3c56",
                "isDelete": false,
                "value": {
                    "productID":"�pharma.net.productIDKey�001�Paracetamol�",
                    "name": "Paracetamol",
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