

## Commands to test Pharma-Network

### How to Start Network:

#### 1. Generate crypto material and channel artifacts

command:

# **./fabricNetwork.sh generate**

```
upgrad@upgrad-VirtualBox:~/Desktop/pharma-network/network$ ./fabricNetwork.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] y
proceeding ...
/home/upgrad/Desktop/pharma-network/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
consumer.pharma-network.com
transporter.pharma-network.com
+ res=0
+ set +x

/home/upgrad/Desktop/pharma-network/network/bin/configtxgen
##### Generating Orderer Genesis Block #####
#####
+ configtxgen -profile OrdererGenesis -channelID upgrad-sys-channel -outputBlock ./channel-artifacts/genesis.block
2020-10-04 16:59:06.925 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2020-10-04 16:59:06.943 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 002 orderer type: solo
2020-10-04 16:59:06.943 IST [common.tools.configtxgen.localconfig] Load -> INFO 003 Loaded configuration: /home/upgrad/Desktop/pharma-network/network/configtx.yaml
2020-10-04 16:59:06.964 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 004 orderer type: solo
2020-10-04 16:59:06.964 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 005 Loaded configuration: /home/upgrad/Desktop/pharma-network/network/configtx.yaml
2020-10-04 16:59:06.966 IST [common.tools.configtxgen] doOutputBlock -> INFO 006 Generating genesis block
2020-10-04 16:59:06.967 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
2020-10-04 16:59:07.997 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2020-10-04 16:59:07.015 IST [common.tools.configtxgen.localconfig] Load -> INFO 002 Loaded configuration: /home/upgrad/Desktop/pharma-network/network/configtx.yaml
2020-10-04 16:59:07.036 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 003 orderer type: solo
2020-10-04 16:59:07.036 IST [common.tools.configtxgen.localconfig] LoadTopLevel -> INFO 004 Loaded configuration: /home/upgrad/Desktop/pharma-network/network/configtx.yaml
2020-10-04 16:59:07.037 IST [common.tools.configtxgen] doOutputChannelCreateTx -> INFO 005 Generating new channel configtx
```

#### 2. create docker container, create and join channel, update anchor peer,

command:

# **./fabricNetwork.sh up**

```

upgrad@upgrad-VirtualBox:~/Desktop/pharma-network/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]
proceeding ...
LOCAL_VERSION=1.4.3
DOCKER_IMAGE_VERSION=1.4.3
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.consumer.pharma-network.com" with default driver
Creating volume "network_peer1.consumer.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 ca.manufacturer.pharma-network.com ... done
Creating peer0.consumer.pharma-network.com ... done
Creating chaincode ... done
Creating ca.consumer.pharma-network.com ... done
Creating peer0.retailer.pharma-network.com ... done
Creating peer1.manufacturer.pharma-network.com ... done
Creating ca.transporter.pharma-network.com ... done
Creating peer0.transporter.pharma-network.com ... done
Creating peer0.manufacturer.pharma-network.com ... done
Creating peer0.distributor.pharma-network.com ... done
Creating peer1.distributor.pharma-network.com ... done
Creating ca.retailer.pharma-network.com ... done
Creating orderer.pharma-network.com ... done
Creating peer1.transporter.pharma-network.com ... done
Creating peer1.retailer.pharma-network.com ... done
Creating ca.distributor.pharma-network.com ... done
Creating peer1.consumer.pharma-network.com ... done
Creating cli ... done

```

```

===== 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
2020-10-04 11:33:19.652 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2020-10-04 11:33:19.668 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
===== Anchor peers updated for org 'retailerMSP' 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
2020-10-04 11:33:24.738 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2020-10-04 11:33:24.756 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
===== Anchor peers updated for org 'consumerMSP' 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
2020-10-04 11:33:29.827 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2020-10-04 11:33:29.843 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
===== Anchor peers updated for org 'transporterMSP' on channel 'pharmachannel' =====

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

END

```

2.b : connect to the chaincode container and run the chaincode:

command:

**# docker exec -it chaincode /bin/bash**

**# npm install (to download all node dependencies)**

**# npm run start-man (run the script)**

```

upgrad@upgrad-VirtualBox:~/Desktop/pharma-network/application$ cd ../network/
upgrad@upgrad-VirtualBox:~/Desktop/pharma-network/network$ docker exec -it chaincode /bin/bash
root@7f78d4a90253:/opt/gopath/src/chaincode# npm run start-man

> pharmanet@0.0.1 start-man /opt/gopath/src/chaincode
> fabric-chaincode-node start --peer.address peer0.manufacturer.pharma-network.com:7053 --chaincode-id-name pharmanet:1.1

Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
2020-10-04T11:35:52.253Z info [shim:contracts-spi/bootstrap.js] No metadata file supplied in contract, introspection will generate all the data
2020-10-04T11:35:52.253Z info [shim:contracts-spi/chaincodefromcontract.js] Using serializers {"transaction":"jsonSerializer","serializers":{}}
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
2020-10-04T11:35:52.283Z info [shim:llb/chaincode.js] Registering with peer peer0.manufacturer.pharma-network.com:7053 as chaincode "pharmanet:1.1"

Command succeeded

2020-10-04T11:35:52.312Z info [shim:llb/handler.js] Successfully registered with peer node. State transferred to "established"
2020-10-04T11:35:52.313Z info [shim:llb/handler.js] Successfully established communication with peer node. State transferred to "ready"

```

note:

package.json contains multiple script to start respective container for testing:

```

() package.json
chaincode > () package.json > ...
1  {
2    "name": "pharmanet",
3    "version": "0.0.1",
4    "description": "pharmanet Network",
5    "main": "index.js",
6    "engines": {
7      "node": ">=8",
8      "npm": ">=5"
9    },
10   "scripts": {
11     "lint": "eslint .",
12     "pretest": "npm run lint",
13     "test": "nyc mocha test --recursive",
14     "start-man": "fabric-chaincode-node start --peer.address peer0.manufacturer.pharma-network.com:7053 --chaincode-id-name pharmanet:1.1",
15     "start-dis": "fabric-chaincode-node start --peer.address peer0.distributor.pharma-network.com:9053 --chaincode-id-name pharmanet:1.1",
16     "start-ret": "fabric-chaincode-node start --peer.address peer0.retailer.pharma-network.com:11053 --chaincode-id-name pharmanet:1.1",
17     "start-tra": "fabric-chaincode-node start --peer.address peer0.transporter.pharma-network.com:15053 --chaincode-id-name pharmanet:1.1",
18     "start": "fabric-chaincode-node start",
19     "mocha": "mocha test --recursive"
20   },
21 }

```

we need to run respective container script while invoking functions, these functions are restricted to be only invoked by specific organisation.

3. Install and instantiate chaincode :

command:

**# ./fabricNetwork.sh install**

```

upgrad@upgrad-VirtualBox:~/Desktop/pharma-network/network$ ./fabricNetwork.sh install
Installing chaincode for channel 'pharmachannel' with CLI timeout of '15' seconds and CLI delay of '5' seconds and chaincode version '1.4.3'
Continue? [Y/n]
proceeding ...
LOCAL_VERSION=1.4.3
DOCKER_IMAGE_VERSION=1.4.3

```

START

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
2020-10-04 11:37:38.486 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2020-10-04 11:37:38.486 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2020-10-04 11:37:38.623 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
===== Chaincode pharmanet 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
2020-10-04 11:37:38.672 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2020-10-04 11:37:38.672 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2020-10-04 11:37:38.745 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
===== Chaincode pharmanet 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
2020-10-04 11:37:38.793 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2020-10-04 11:37:38.793 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2020-10-04 11:37:38.867 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
===== Chaincode pharmanet 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

```

```

===== Chaincode pharmanet 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
2020-10-04 11:37:39.809 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2020-10-04 11:37:39.809 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2020-10-04 11:37:39.993 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
===== Chaincode pharmanet is installed on peer1.transporter =====

Instantiating chaincode on channel using peer0.manufacturer.pharma-network.com ...
+ peer chaincode instantiate -o orderer.pharma-network.com:7050 -c pharmanet -l node -v 1.1 -c '{"Args":["org.pharma-network.registration:instantiate"]}' -P 'OR (''manufacturerMSP.member'',''distributorMSP.member'',''retailerMSP.member'',''consumerMSP.member'',''transporterMSP.member'')'
+ res=0
+ set +x
2020-10-04 11:37:39.972 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2020-10-04 11:37:39.972 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
===== Chaincode is instantiated on peer0.manufacturer on channel 'pharmachannel' =====

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

```

END

How to start node application

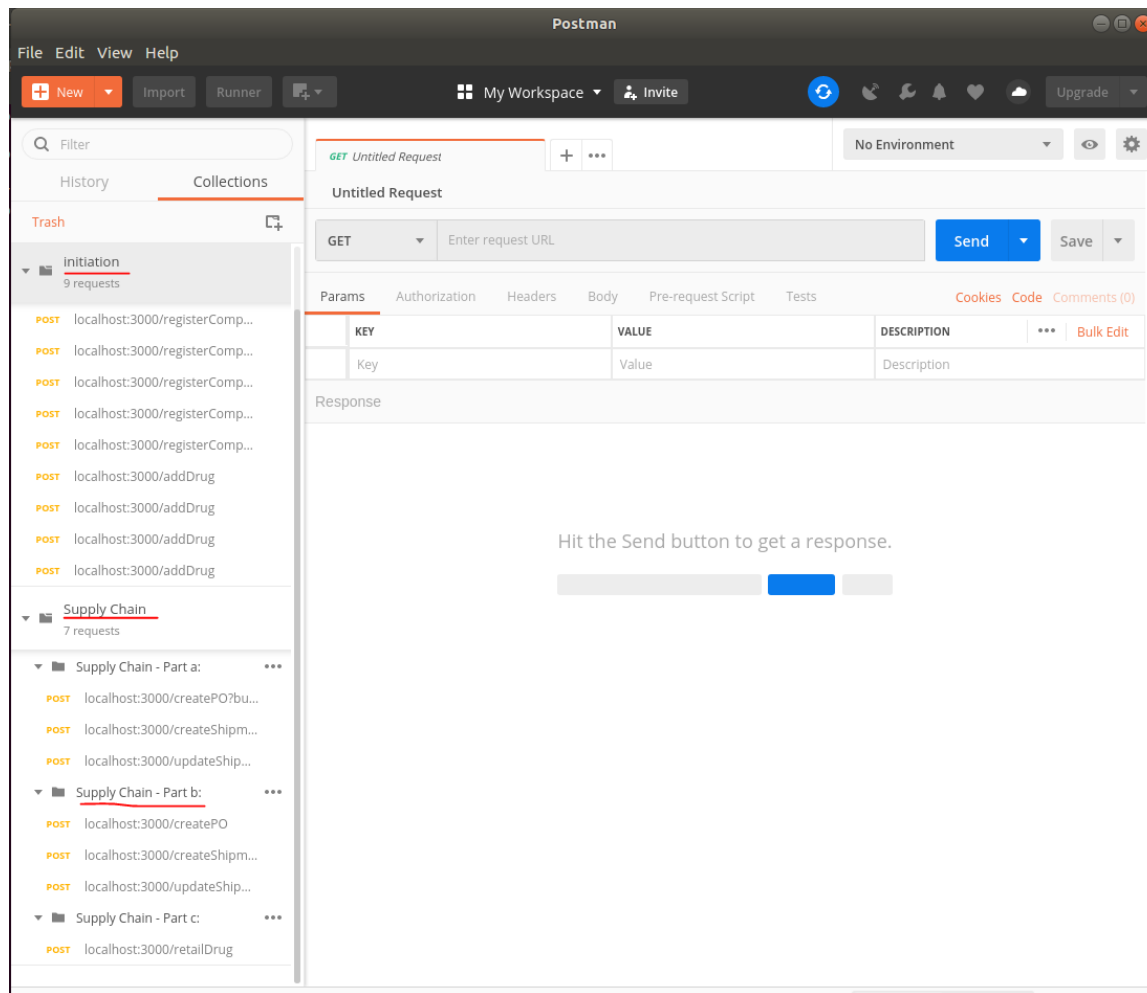
1. navigate to the application folder :

commands:

> # cd /home/upgrad/Desktop/pharma-network/application

Note: make sure to update the keystores to make sure identity can be successfully stored in the wallet

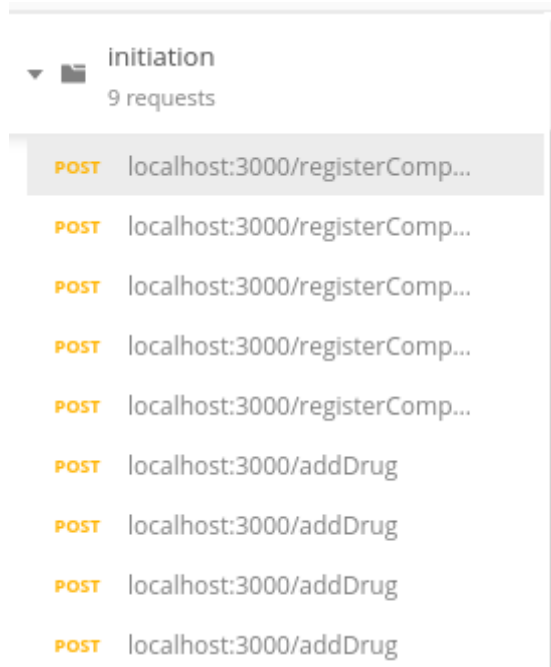




Select the collection and run them

### Test Case 1: Initiation

>Create a collection file named 'initiation' which contains the HTTP requests to perform the following functions:

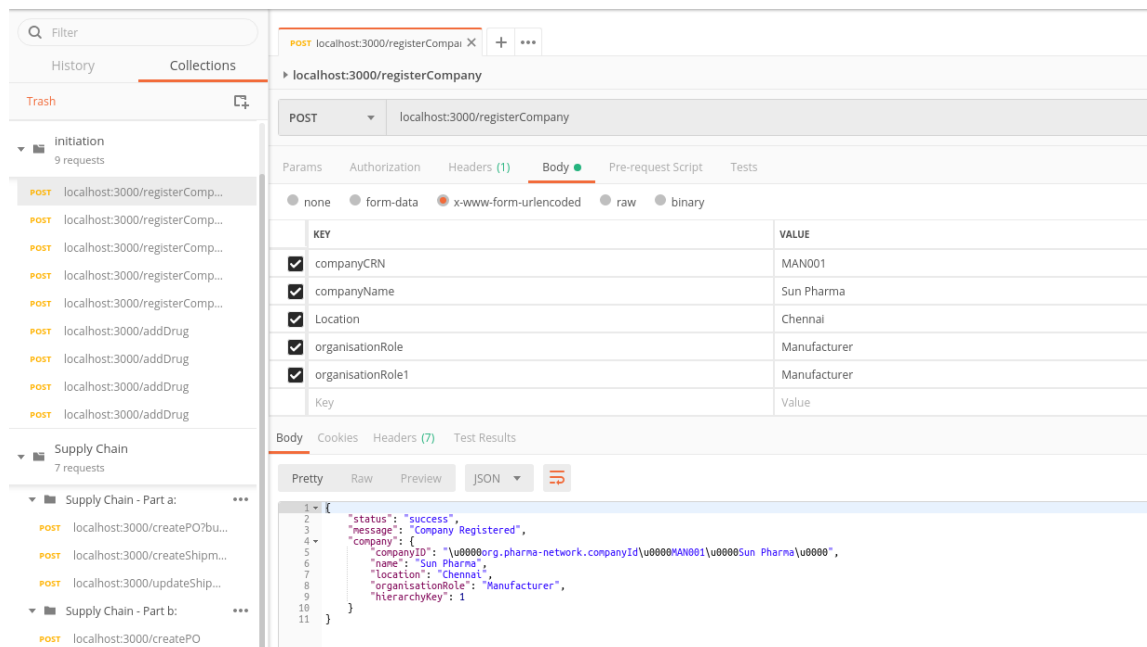


>Create a manufacturer with the following details:

Name: 'Sun Pharma'

CRN number: 'MAN001'

Location: 'Chennai'



>Create a transporter with the following details:

Name: 'FedEx'

CRN number: 'TRA001'

Location: 'Delhi'

The screenshot shows the Postman interface with a collection named 'localhost:3000/registerCompany'. The selected request is a POST method. The body is set to 'x-www-form-urlencoded' and contains the following data:

KEY	VALUE
<input checked="" type="checkbox"/> companyCRN	TRA001
<input checked="" type="checkbox"/> companyName	FedEx
<input checked="" type="checkbox"/> Location	Delhi
<input checked="" type="checkbox"/> organisationRole	Transporter
<input checked="" type="checkbox"/> organisationRole1	Transporter
Key	Value

The response is displayed in the 'Body' tab, showing a JSON object:

```
1 {
2   "status": "success",
3   "message": "Company Registered",
4   "company": {
5     "companyID": "\u0000org.pharma-network.companyId\u0000TRA001\u0000FedEx\u0000",
6     "name": "FedEx",
7     "location": "Delhi",
8     "organisationRole": "Transporter"
9   }
10 }
```

>Create another transporter with the following details:

Name: 'Blue Dart'

CRN number: 'TRA002'

Location: 'Bangalore'



The screenshot shows the Postman interface with a REST client request for `localhost:3000/registerCompany`. The request is a POST with the following parameters:

KEY	VALUE
<input checked="" type="checkbox"/> companyCRN	TRA002
<input checked="" type="checkbox"/> companyName	Blue Dart
<input checked="" type="checkbox"/> Location	Bangalore
<input checked="" type="checkbox"/> organisationRole	Transporter
<input checked="" type="checkbox"/> organisationRole1	Transporter
Key	Value

The response is a JSON object:

```
1 {
2   "status": "success",
3   "message": "Company Registered",
4   "company": {
5     "companyID": "\u0000org.pharma-network.companyId\u0000TRA002\u0000Blue Dart\u0000",
6     "name": "Blue Dart",
7     "location": "Bangalore",
8     "organisationRole": "Transporter"
9   }
10 }
```

>Create a distributor with the following details:

Name: 'VG Pharma'

CRN number: 'DIST001'

Location: 'Vizag'

History

Collections

Trash

Initiation

9 requests

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

Supply Chain

7 requests

Supply Chain - Part a:

POST localhost:3000/createPO?bu...

POST localhost:3000/createShipm...

POST localhost:3000/updateShip...

Supply Chain - Part b:

POST localhost:3000/createPO

localhost:3000/registerCompany

POST localhost:3000/registerCompany

Params

Authorization

Headers (1)

Body

Pre-request Script

Tests

none

form-data

x-www-form-urlencoded

raw

binary

KEY	VALUE
<input checked="" type="checkbox"/> companyCRN	DIST001
<input checked="" type="checkbox"/> companyName	VG Pharma
<input checked="" type="checkbox"/> Location	Vizag
<input checked="" type="checkbox"/> organisationRole	Distributor
<input checked="" type="checkbox"/> organisationRole1	Distributor
Key	Value

Body

Cookies

Headers (7)

Test Results

Pretty

Raw

Preview

JSON

```

1 {
2   "status": "success",
3   "message": "Company Registered",
4   "company": {
5     "companyID": "\u0000org.pharma-network.companyId\u0000DIST001\u0000VG Pharma\u0000",
6     "name": "VG Pharma",
7     "location": "Vizag",
8     "organisationRole": "Distributor",
9     "hierarchyKey": 2
10  }
11 }

```

>Create a retailer with the following details:

Name: 'upgrad'

CRN number: 'RET002'

Location: 'Mumbai'



History

Collections

Trash

Initiation

9 requests

POST

localhost:3000/registerComp...

POST

localhost:3000/registerComp...

POST

localhost:3000/registerComp...

POST

localhost:3000/registerComp...

POST

localhost:3000/registerComp...

POST

localhost:3000/addDrug

POST

localhost:3000/addDrug

POST

localhost:3000/addDrug

POST

localhost:3000/addDrug

Supply Chain

7 requests

Supply Chain - Part a:

...

POST

localhost:3000/createPO?bu...

POST

localhost:3000/createShipm...

POST

localhost:3000/updateShip...

Supply Chain - Part b:

...

POST

localhost:3000/createPO

POST

localhost:3000/createShipm...

POST

localhost:3000/updateShip...

localhost:3000/addDrug

POST

localhost:3000/addDrug

Params

Authorization

Headers (1)

Body

Pre-request Script

Tests

none

form-data

x-www-form-urlencoded

raw

binary

KEY	VALUE
<input checked="" type="checkbox"/> drugName	Paracetamol
<input checked="" type="checkbox"/> serialNo	002
<input checked="" type="checkbox"/> mfgDate	JAN2020
<input checked="" type="checkbox"/> expDate	DEC2022
<input checked="" type="checkbox"/> companyCRN	MAN001
<input checked="" type="checkbox"/> organisationRole	Manufacturer
Key	Value

Body

Cookies

Headers (7)

Test Results

Pretty

Raw

Preview

JSON

```
1 {
2   "status": "success",
3   "message": "Drug Added successfully",
4   "drug": {
5     "productID": "\u0000org.pharma-network.productIDKey\u0000002\u0000Paracetamol\u0000",
6     "name": "Paracetamol",
7     "manufacturer": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
8     "manufacturingDate": "JAN2020",
9     "expiryDate": "DEC2022",
10    "owner": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
11    "shipment": ""
12  }
13 }
```

History

Collections

Trash

Initiation

9 requests

POST

localhost:3000/registerComp...

POST

localhost:3000/registerComp...

POST

localhost:3000/registerComp...

POST

localhost:3000/registerComp...

POST

localhost:3000/registerComp...

POST

localhost:3000/addDrug

POST

localhost:3000/addDrug

POST

localhost:3000/addDrug

POST

localhost:3000/addDrug

Supply Chain

7 requests

Supply Chain - Part a:

...

POST

localhost:3000/createPO?bu...

POST

localhost:3000/createShipm...

POST

localhost:3000/updateShip...

Supply Chain - Part b:

...

POST

localhost:3000/createPO

POST

localhost:3000/createShipm...

POST

localhost:3000/updateShip...

localhost:3000/addDrug

POST

localhost:3000/addDrug

Params

Authorization

Headers (1)

Body

Pre-request Script

Tests

none

form-data

x-www-form-urlencoded

raw

binary

KEY	VALUE
<input checked="" type="checkbox"/> drugName	Paracetamol
<input checked="" type="checkbox"/> serialNo	003
<input checked="" type="checkbox"/> mfgDate	JAN2020
<input checked="" type="checkbox"/> expDate	DEC2022
<input checked="" type="checkbox"/> companyCRN	MAN001
<input checked="" type="checkbox"/> organisationRole	Manufacturer
Key	Value

Body

Cookies

Headers (7)

Test Results

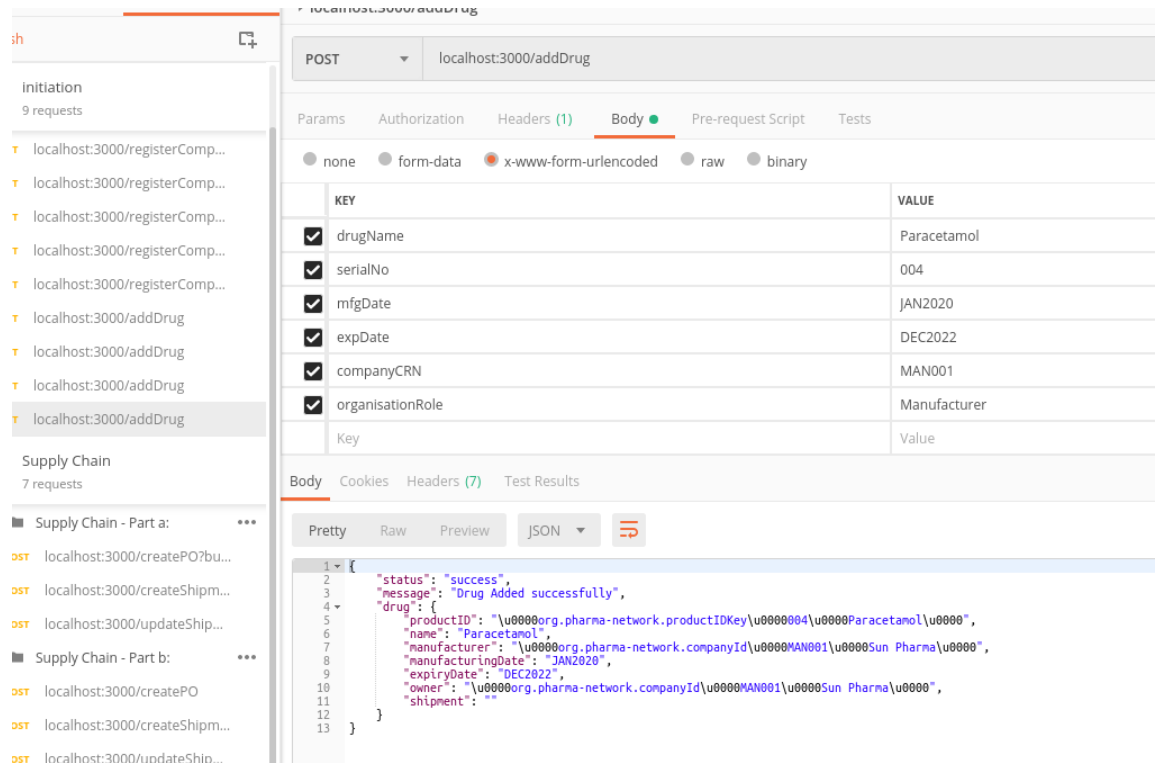
Pretty

Raw

Preview

JSON

```
1 {
2   "status": "success",
3   "message": "Drug Added successfully",
4   "drug": {
5     "productID": "\u0000org.pharma-network.productIDKey\u0000003\u0000Paracetamol\u0000",
6     "name": "Paracetamol",
7     "manufacturer": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
8     "manufacturingDate": "JAN2020",
9     "expiryDate": "DEC2022",
10    "owner": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
11    "shipment": ""
12  }
13 }
```



POST localhost:3000/addDrug

Params Authorization Headers (1) **Body** Pre-request Script Tests

none form-data x-www-form-urlencoded raw binary

KEY	VALUE
<input checked="" type="checkbox"/> drugName	Paracetamol
<input checked="" type="checkbox"/> serialNo	004
<input checked="" type="checkbox"/> mfgDate	JAN2020
<input checked="" type="checkbox"/> expDate	DEC2022
<input checked="" type="checkbox"/> companyCRN	MAN001
<input checked="" type="checkbox"/> organisationRole	Manufacturer
Key	Value

Body Cookies Headers (7) Test Results

Pretty Raw Preview JSON

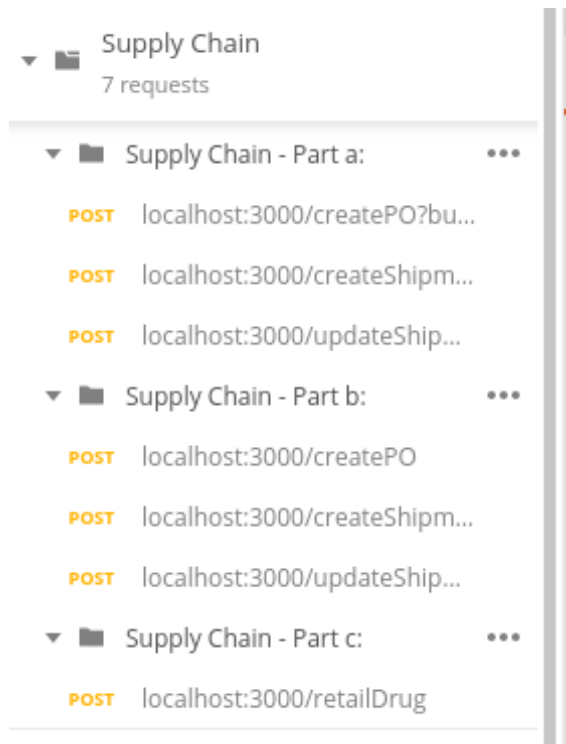
```

1 {
2   "status": "success",
3   "message": "Drug Added successfully",
4   "drug": {
5     "productId": "\u0000org.pharma-network.productIdKey\u0000004\u0000Paracetamol\u0000",
6     "name": "Paracetamol",
7     "manufacturer": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
8     "manufacturingDate": "JAN2020",
9     "expiryDate": "DEC2022",
10    "owner": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
11    "shipment": ""
12  }
13 }

```

## Test Case 2: Supply Chain

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



Part a:

>Purchase Order raised by 'VG Pharma' to purchase 3 strips of paracetamol from 'Sun Pharma'.

Expected Output: Display the PO object created in the response body.

The screenshot displays a REST client interface with a 'History' tab on the left and a 'Collections' tab on the right. The 'History' tab shows a list of requests under 'Initiation' and 'Supply Chain' categories. The 'Collections' tab shows a single POST request to 'localhost:3000/createPO?buyerCRN=DIST001&sellerCRN=MAN001&drugName=Paracetamol&quantity=3&organisationRole=Manufacturer'.

The request is a POST method with the following parameters:

KEY	VALUE
buyerCRN	DIST001
sellerCRN	MAN001
drugName	Paracetamol
quantity	3
organisationRole	Manufacturer

The response is a JSON object with the following structure:

```

1 {
2   "status": "success",
3   "message": "Purchase order created successfully",
4   "purchaseOrder": {
5     "poID": "\u0000org.pharma-network.poIDKey\u0000DIST001\u0000Paracetamol\u0000",
6     "drugName": "Paracetamol",
7     "quantity": 3,
8     "buyer": "\u0000org.pharma-network.companyId\u0000DIST001\u0000VG Pharma\u0000",
9     "seller": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000"
10  }
11 }

```

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

Expected Output: Display the Shipment object created in the response body.

History

Collections

Trash

initiation

9 requests

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

Supply Chain

7 requests

Supply Chain - Part a:

POST localhost:3000/createPO?bu...

POST localhost:3000/createShipm...

POST localhost:3000/updateShip...

Supply Chain - Part b:

POST localhost:3000/createPO

POST localhost:3000/createShipm...

localhost:3000/createShipment

POST localhost:3000/createShipment

Params

Authorization

Headers (1)

Body

Pre-request Script

Tests

none

form-data

x-www-form-urlencoded

raw

binary

KEY	VALUE
<input checked="" type="checkbox"/> buyerCRN	DIST001
<input checked="" type="checkbox"/> drugName	Paracetamol
<input checked="" type="checkbox"/> listOfAssets	001,002,003
<input checked="" type="checkbox"/> transporterCRN	TRA001
<input checked="" type="checkbox"/> organisationRole	Manufacturer
Key	Value

Body

Cookies

Headers (7)

Test Results

Pretty

Raw

Preview

JSON

```

1 {
2   "status": "success",
3   "message": "Shipment created successfully",
4   "shipment": {
5     "shipmentID": "\u0000org.pharma-network.shipmentKey\u0000DIST001\u0000Paracetamol\u0000",
6     "creator": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
7     "assets": [
8       "\u0000org.pharma-network.productIdKey\u0000000001\u0000Paracetamol\u0000",
9       "\u0000org.pharma-network.productIdKey\u0000000002\u0000Paracetamol\u0000",
10      "\u0000org.pharma-network.productIdKey\u0000000003\u0000Paracetamol\u0000"
11     ],
12     "transporter": "\u0000org.pharma-network.companyId\u0000TRA001\u0000FedEx\u0000",
13     "status": "in-transit"
14   }
15 }

```

>‘FedEx’ delivers the shipment to ‘VG pharma’.

Expected Output: Display the data of each asset of the shipment.



History

Collections

Trash

Initiation

9 requests

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

Supply Chain

7 requests

Supply Chain - Part a:

POST localhost:3000/createPO?bu...

POST localhost:3000/createShpm...

POST localhost:3000/updateShp...

Supply Chain - Part b:

POST localhost:3000/createPO

POST localhost:3000/createShpm...

POST localhost:3000/updateShp...

Supply Chain - Part c:

POST localhost:3000/retailDrug

POST localhost:3000/updateShipment

Params

Authorization

Headers (1)

Body

Pre-request Script

Tests

none

form-data

x-www-form-urlencoded

raw

binary

KEY	VALUE
<input checked="" type="checkbox"/> buyerCRN	DIST001
<input checked="" type="checkbox"/> drugName	Paracetamol
<input checked="" type="checkbox"/> transporterCRN	TRA001
<input checked="" type="checkbox"/> organisationRole	Transporter
Key	Value

Body

Cookies

Headers (7)

Test Results

Pretty

Raw

Preview

JSON

```

1 {
2   "status": "success",
3   "message": "Shipment updated successfully",
4   "shipment": [
5     {
6       "productID": "\u0000org.pharma-network.productIDKey\u0000001\u0000Paracetamol\u0000",
7       "name": "Paracetamol",
8       "manufacturer": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
9       "manufacturingDate": "JAN2020",
10      "expiryDate": "DEC2022",
11      "owner": "\u0000org.pharma-network.companyId\u0000001IST001\u0000VG Pharma\u0000",
12      "shipment": "\u0000org.pharma-network.shipmentKey\u0000001IST001\u0000Paracetamol\u0000"
13    },
14    {
15      "productID": "\u0000org.pharma-network.productIDKey\u0000002\u0000Paracetamol\u0000",
16      "name": "Paracetamol",
17      "manufacturer": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
18      "manufacturingDate": "JAN2020",
19      "expiryDate": "DEC2022",
20      "owner": "\u0000org.pharma-network.companyId\u0000001IST001\u0000VG Pharma\u0000",
21      "shipment": "\u0000org.pharma-network.shipmentKey\u0000001IST001\u0000Paracetamol\u0000"
22    },
23    {
24      "productID": "\u0000org.pharma-network.productIDKey\u0000003\u0000Paracetamol\u0000",
25      "name": "Paracetamol",
26      "manufacturer": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
27      "manufacturingDate": "JAN2020",
28      "expiryDate": "DEC2022",
29      "owner": "\u0000org.pharma-network.companyId\u0000001IST001\u0000VG Pharma\u0000",
30      "shipment": "\u0000org.pharma-network.shipmentKey\u0000001IST001\u0000Paracetamol\u0000"
31    }
32  ]
33 }

```

Part b:

>Purchase Order raised by 'upgrad' to purchase 2 strips of paracetamol from 'VG Pharma'.

Expected Output: Display the PO object created in the response body.

Trash

Initiation

9 requests

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

Supply Chain

7 requests

Supply Chain - Part a:

POST localhost:3000/createPO?bu...

POST localhost:3000/createShipm...

POST localhost:3000/updateShip...

Supply Chain - Part b:

POST localhost:3000/createPO

POST localhost:3000/createPO

Params

Authorization

Headers (1)

Body

Pre-request Script

Tests

none

form-data

x-www-form-urlencoded

raw

binary

KEY	VALUE
<input checked="" type="checkbox"/> buyerCRN	RET002
<input checked="" type="checkbox"/> sellerCRN	DIST001
<input checked="" type="checkbox"/> drugName	Paracetamol
<input checked="" type="checkbox"/> quantity	2
<input checked="" type="checkbox"/> organisationRole	Manufacturer
Key	Value

Body

Cookies

Headers (7)

Test Results

Pretty

Raw

Preview

JSON

```

1  {
2    "status": "success",
3    "message": "Purchase order created successfully",
4    "purchaseOrder": {
5      "poID": "\u0000org.pharma-network.poIDKey\u0000RET002\u0000Paracetamol\u0000",
6      "drugName": "Paracetamol",
7      "quantity": "2",
8      "buyer": "\u0000org.pharma-network.companyId\u0000RET002\u0000upgrad\u0000",
9      "seller": "\u0000org.pharma-network.companyId\u0000DIST001\u0000VG Pharma\u0000"
10   }
11 }

```

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

Expected Output: Display the Shipment object created in the response body.

history

collections

Trash

initiation

9 requests

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

Supply Chain

7 requests

Supply Chain - Part a:

POST localhost:3000/createPO?bu...

POST localhost:3000/createShipm...

POST localhost:3000/updateShip...

Supply Chain - Part b:

POST localhost:3000/createPO

POST localhost:3000/createShipm...

localhost:3000/createShipment

POST localhost:3000/createShipment

Params

Authorization

Headers (1)

Body

Pre-request Script

Tests

none

form-data

x-www-form-urlencoded

raw

binary

KEY	VALUE
<input checked="" type="checkbox"/> buyerCRN	RET002
<input checked="" type="checkbox"/> drugName	Paracetamol
<input checked="" type="checkbox"/> listOfAssets	001,002
<input checked="" type="checkbox"/> transporterCRN	TRA002
<input checked="" type="checkbox"/> organisationRole	Manufacturer
Key	Value

Body

Cookies

Headers (7)

Test Results

Pretty

Raw

Preview

JSON

```

1 {
2   "status": "success",
3   "message": "Shipment created successfully",
4   "shipment": {
5     "shipmentID": "\u0000org.pharma-network.shipmentKey\u0000RET002\u0000Paracetamol\u0000",
6     "creator": "\u0000org.pharma-network.companyId\u0000D15T001\u0000VG Pharma\u0000",
7     "assets": [
8       "\u0000org.pharma-network.productIDKey\u00000001\u0000Paracetamol\u0000",
9       "\u0000org.pharma-network.productIDKey\u00000002\u0000Paracetamol\u0000"
10    ],
11     "transporter": "\u0000org.pharma-network.companyId\u0000TRA002\u0000Blue Dart\u0000",
12     "status": "in-transit"
13   }
14 }

```

>‘Blue Dart’ delivers the shipment to ‘upgrad’.

Expected Output: Display the data of each asset of the shipment in the response body.

Trash

initiation

9 requests

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/registerComp...

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

POST localhost:3000/addDrug

Supply Chain

7 requests

Supply Chain - Part a:

POST localhost:3000/createPO?bu...

POST localhost:3000/createShipm...

POST localhost:3000/updateShip...

Supply Chain - Part b:

POST localhost:3000/createPO

POST localhost:3000/createShipm...

POST localhost:3000/updateShip...

Supply Chain - Part c:

POST localhost:3000/retailDrug

POST localhost:3000/updateShipment

Params

Authorization

Headers (1)

Body

Pre-request Script

Tests

none

form-data

x-www-form-urlencoded

raw

binary

KEY	VALUE
buyerCRN	RET002
drugName	Paracetamol
transporterCRN	TRA002
organisationRole	Transporter
Key	Value

Body

Cookies

Headers (7)

Test Results

Pretty

Raw

Preview

JSON

```

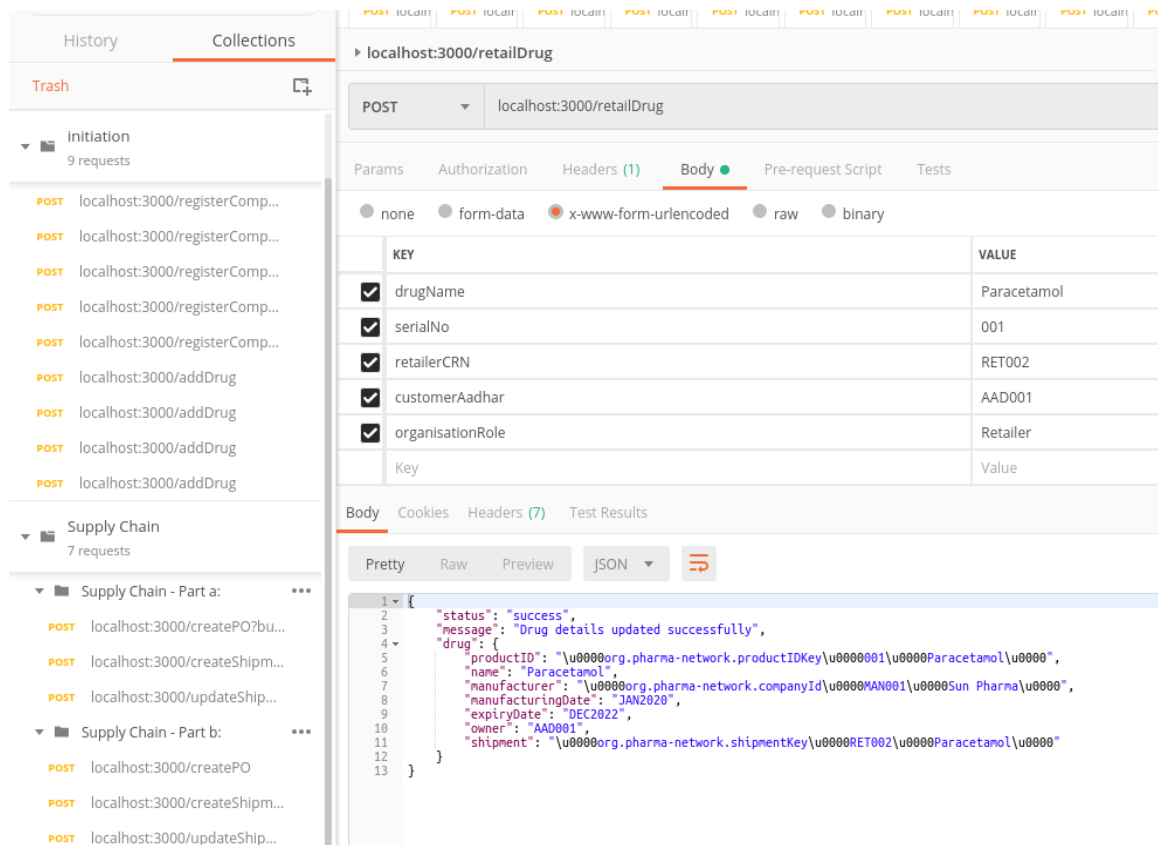
1 {
2   "status": "success",
3   "message": "Shipment updated successfully",
4   "shipment": [
5     {
6       "productID": "\u0000org.pharma-network.productIDKey\u0000001\u0000Paracetamol\u0000",
7       "name": "Paracetamol",
8       "manufacturer": "\u0000org.pharma-network.companyId\u000000MAN001\u0000Sun Pharma\u0000",
9       "manufacturingDate": "JAN2020",
10      "expiryDate": "DEC2022",
11      "owner": "\u0000org.pharma-network.companyId\u000000RET002\u0000upgrad\u0000",
12      "shipment": "\u0000org.pharma-network.shipmentKey\u000000RET002\u0000Paracetamol\u0000"
13    },
14    {
15      "productID": "\u0000org.pharma-network.productIDKey\u00000002\u0000Paracetamol\u0000",
16      "name": "Paracetamol",
17      "manufacturer": "\u0000org.pharma-network.companyId\u000000MAN001\u0000Sun Pharma\u0000",
18      "manufacturingDate": "JAN2020",
19      "expiryDate": "DEC2022",
20      "owner": "\u0000org.pharma-network.companyId\u000000RET002\u0000upgrad\u0000",
21      "shipment": "\u0000org.pharma-network.shipmentKey\u000000RET002\u0000Paracetamol\u0000"
22    }
23  ]
24 }

```

Part c:

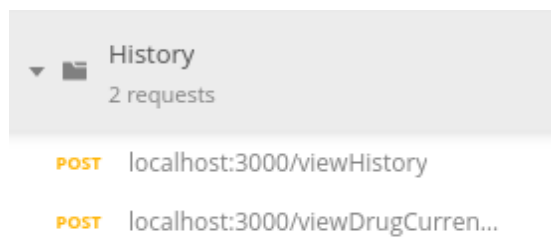
>A customer named 'Akash' with Aadhar Number 'AAD001' buys 1 paracetamol strip from the retailer 'upgrad'.

Expected Output: Display the data of the asset bought by Akash in the response body.



### Test Case 3: History Track Down

>Create a collection file named 'History' which contains the HTTP requests to perform the following functions.



>The customer 'Akash' wishes to check the history of the paracetamol that he bought from 'upgrad'.

Expected Output: The response body should display the entire lifecycle of the asset.

History

Collections

Trash

History  
2 requests

POST localhost:3000/viewHistory

POST localhost:3000/viewDrugCurrent...

Initiation  
9 requests

Supply Chain  
7 requests

localhost:3000/viewHistory

POST localhost:3000/viewHistory

Params Authorization Headers (1) Body Pre-request Script Tests

none

form-data

x-www-form-urlencoded

raw

binary

KEY	VALUE
<input checked="" type="checkbox"/> drugName	Paracetamol
<input checked="" type="checkbox"/> serialNo	001
<input checked="" type="checkbox"/> organisationRole	Manufacturer
Key	Value

Body Cookies Headers (7) Test Results

Pretty

Raw

Preview

JSON

```

1 {
2   "status": "success",
3   "message": "Drug transaction history fetched successfully",
4   "drug": [
5     {
6       "TxId": "4a7b55718391d7662c86c728f00c0cc1e138af961a9bcc5c419861c4d9448cf1",
7       "Timestamp": {
8         "seconds": {
9           "low": 1601812408,
10          "high": 0,
11          "unsigned": false
12        },
13        "nanos": 369000000
14      },
15      "IsDelete": "false",
16      "Value": {
17        "productID": "\u0000org.pharma-network.productIDKey\u0000001\u0000Paracetamol\u0000",
18        "name": "Paracetamol",
19        "manufacturer": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
20        "manufacturingDate": "JAN2020",
21        "expiryDate": "DEC2022",
22        "owner": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
23        "shipment": ""
24      }
25    },
26    {
27      "TxId": "ae2601028736c935f8e471c6d6980b508728d273d4dae9d90113b1e69c1fb6e4",
28      "Timestamp": {
29        "seconds": {
30          "low": 1601812733,
31          "high": 0,
32          "unsigned": false
33        },
34        "nanos": 14000000
35      },
36      "IsDelete": "false",
37      "Value": {
38        "productID": "\u0000org.pharma-network.productIDKey\u0000001\u0000Paracetamol\u0000",
39        "name": "Paracetamol",
40        "manufacturer": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
41        "manufacturingDate": "JAN2020",
42        "expiryDate": "DEC2022",
43        "owner": "\u0000org.pharma-network.companyId\u0000001ST001\u0000VGC Pharma\u0000",
44        "shipment": "\u0000org.pharma-network.shipmentKey\u0000001ST001\u0000Paracetamol\u0000"
45      }
46    },
47    {
48      "TxId": "18c0aabdcc8c0ee4cebd4f424a98193835dde9f7721f290893d2aece89b92ace",
49      "Timestamp": {
50        "seconds": {
51          "low": 1601812840,
52          "high": 0,
53          "unsigned": false
54        },
55        "nanos": 17000000
56      },
57      "IsDelete": "false",
58      "Value": {
59        "productID": "\u0000org.pharma-network.productIDKey\u0000001\u0000Paracetamol\u0000",
60        "name": "Paracetamol",
61        "manufacturer": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
62        "manufacturingDate": "JAN2020",
63        "expiryDate": "DEC2022",
64        "owner": "\u0000org.pharma-network.companyId\u000000RET002\u0000upgrad\u0000",
65        "shipment": "\u0000org.pharma-network.shipmentKey\u000000RET002\u0000Paracetamol\u0000"
66      }
67    }
68  ]
69 }

```

>The customer 'Akash' wishes to check the current state of the paracetamol that he bought from 'upgrad'.

Expected Output: The response body should display the current state of the asset.

History

Collections

Trash

History  
2 requests

POST localhost:3000/viewHistory

POST localhost:3000/viewDrugCurrent...

Initiation  
9 requests

Supply Chain  
7 requests

localhost:3000/viewDrugCurrentState

POST localhost:3000/viewDrugCurrentState

ParamsAuthorizationHeaders (1)BodyPre-request ScriptTests

noneform-datax-www-form-urlencodedrawbinary

KEY	VALUE
<input checked="" type="checkbox"/> drugName	Paracetamol
<input checked="" type="checkbox"/> serialNo	001
<input checked="" type="checkbox"/> organisationRole	Manufacturer
Key	Value

BodyCookiesHeaders (7)Test Results

PrettyRawPreviewJSON

```
1 {
2   "status": "success",
3   "message": "Drug details fetched successfully",
4   "drug": {
5     "productID": "\u0000org.pharma-network.productIDKey\u0000001\u0000Paracetamol\u0000",
6     "name": "Paracetamol",
7     "manufacturer": "\u0000org.pharma-network.companyId\u0000MAN001\u0000Sun Pharma\u0000",
8     "manufacturingDate": "JAN2020",
9     "expiryDate": "DEC2022",
10    "owner": "\u0000org.pharma-network.companyId\u0000RET002\u0000upgrad\u0000",
11    "shipment": "\u0000org.pharma-network.shipmentKey\u0000RET002\u0000Paracetamol\u0000"
12  }
13 }
```