

HEALTHCARE RECORDS MANAGEMENT USING HYPERLEDGER COMPOSER

outline

- Motivation
- Architecture
- Introduction to composer
- Setting up the environment
- Participants, Assets, ACL and transactions
- Working with CLI
- Yeoman and angular frontend
- Complete demo step by step in Composer playground
- Composer REST Server

WHY BLOCKCHAIN ??



FAKE PRESCRIPTIONS FOR
DRUGS



MISALIGNMENT OF INSURANCE
PROVIDERS AND HOSPITALS



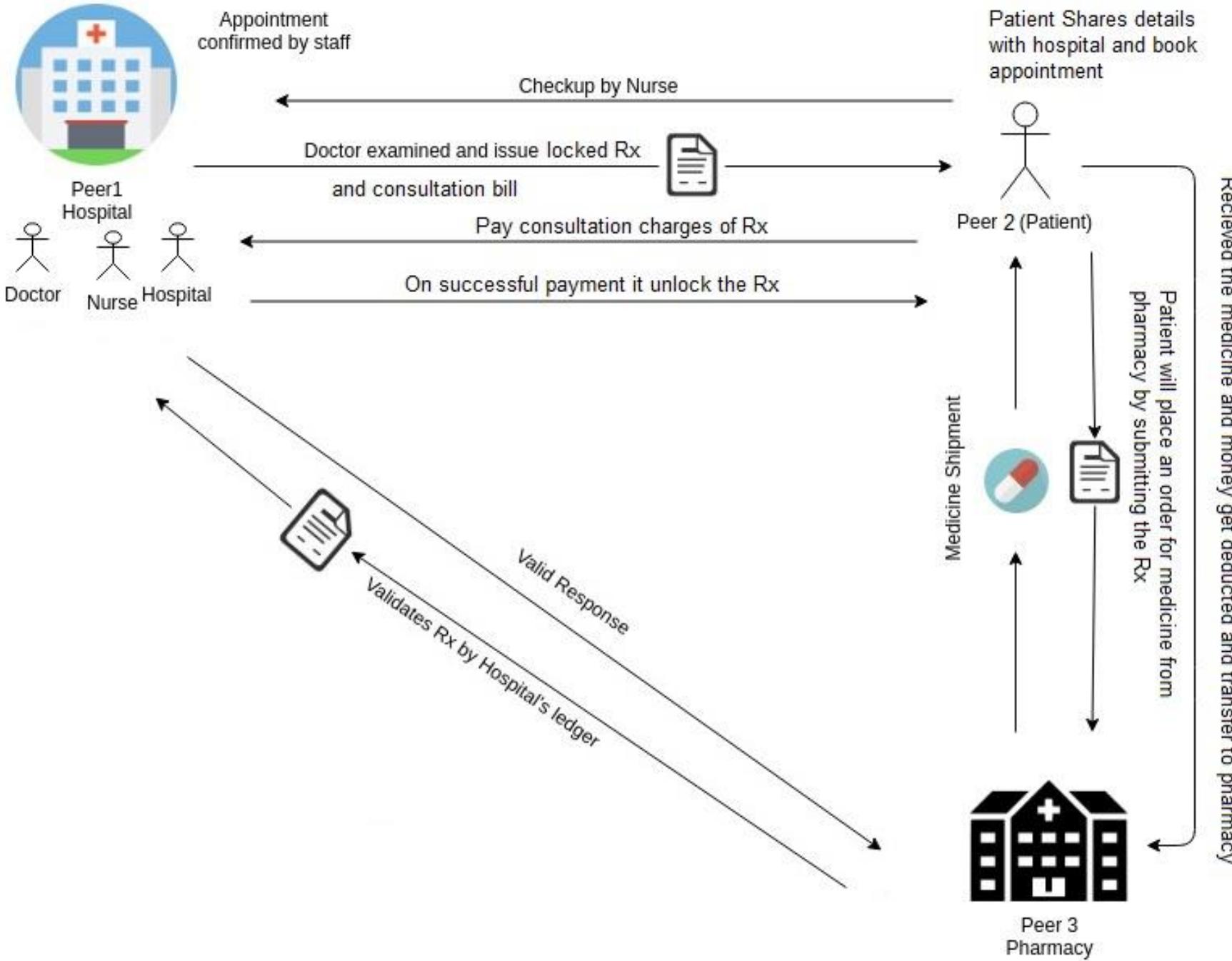
CRUCIAL DATA IS NOT READILY
AVAILABLE AT TIME OF NEED

HEALTHCARE INDUSTRY ARCHITECTURE

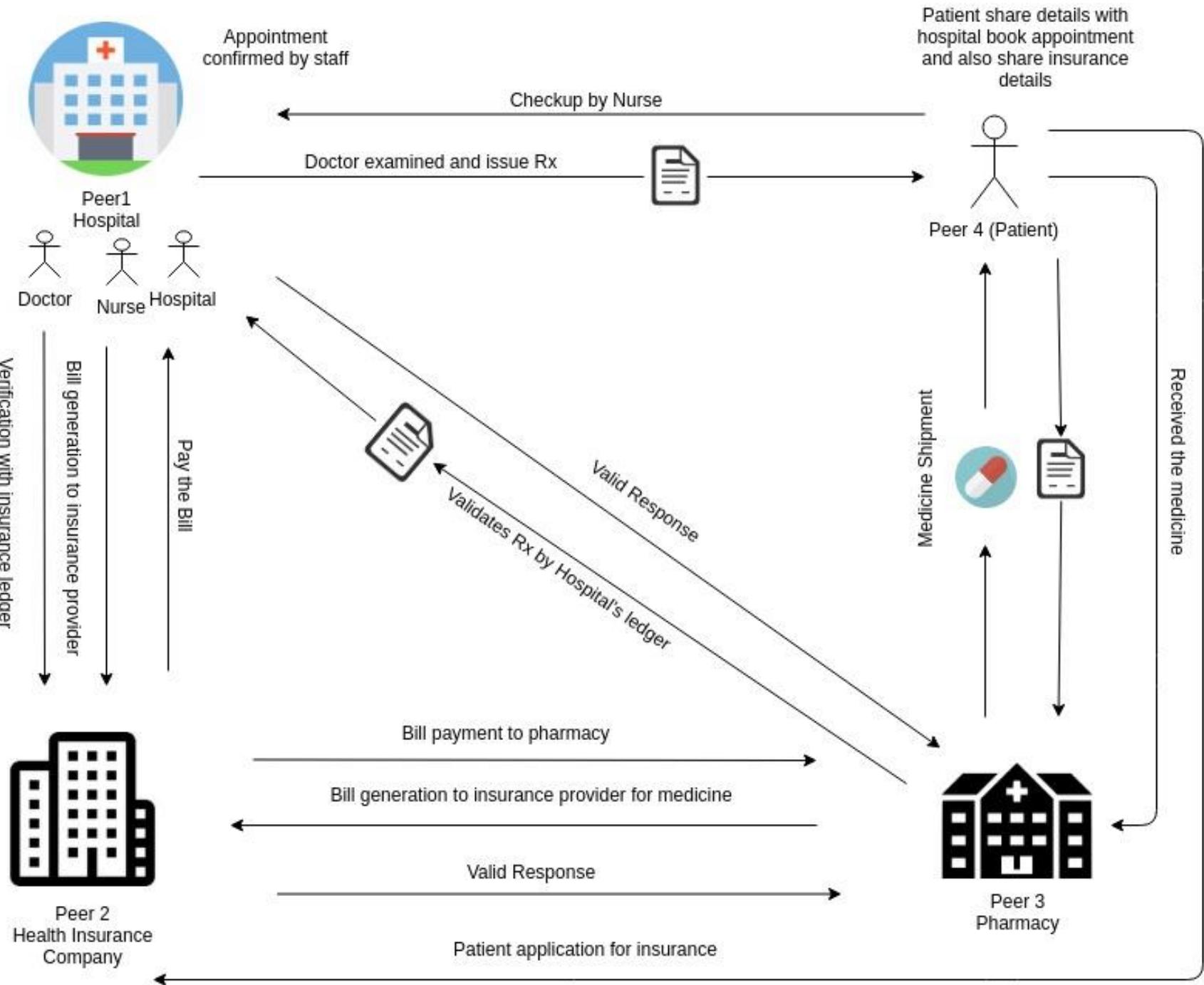
Two types of cases

- Some patient will not have insurance
- Some patient will have insurance

CASE I : PATIENTS DON'T HAVE INSURANCE



CASE II : PATIENTS HAVE INSURANCE



3 THINGS
NEEDS TO BE
IDENTIFIED



PARTICIPANTS



ASSETS



TRANSACTIONS

Participants



Patient



Doctor



Nurse



Pharmacy



Insurance Provider



Clerk

Assets



APPOINTMENT



INSURANCE
LEDGER



PRE – DOCTOR
CHECKUP



RECIPE



RECIPE BILL



CONSULTING
BILL



ORDER

Transactions

Request
Insurance

Approve
Insurance
Request

Confirm
Appointment

Create Recipe

Pay Recipe Bill

Medicine
Order

Medicine
Shipped

Medicine
Received

Payment of
Consultation
Bill

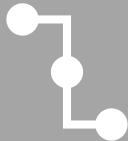


•A LITTLE INTRODUCTION TO HYPERLEDGER COMPOSER

HYPERLEDGER COMPOSER



Open source application
development framework



Simplifies the creation of
Hyperledger fabric blockchain
applications

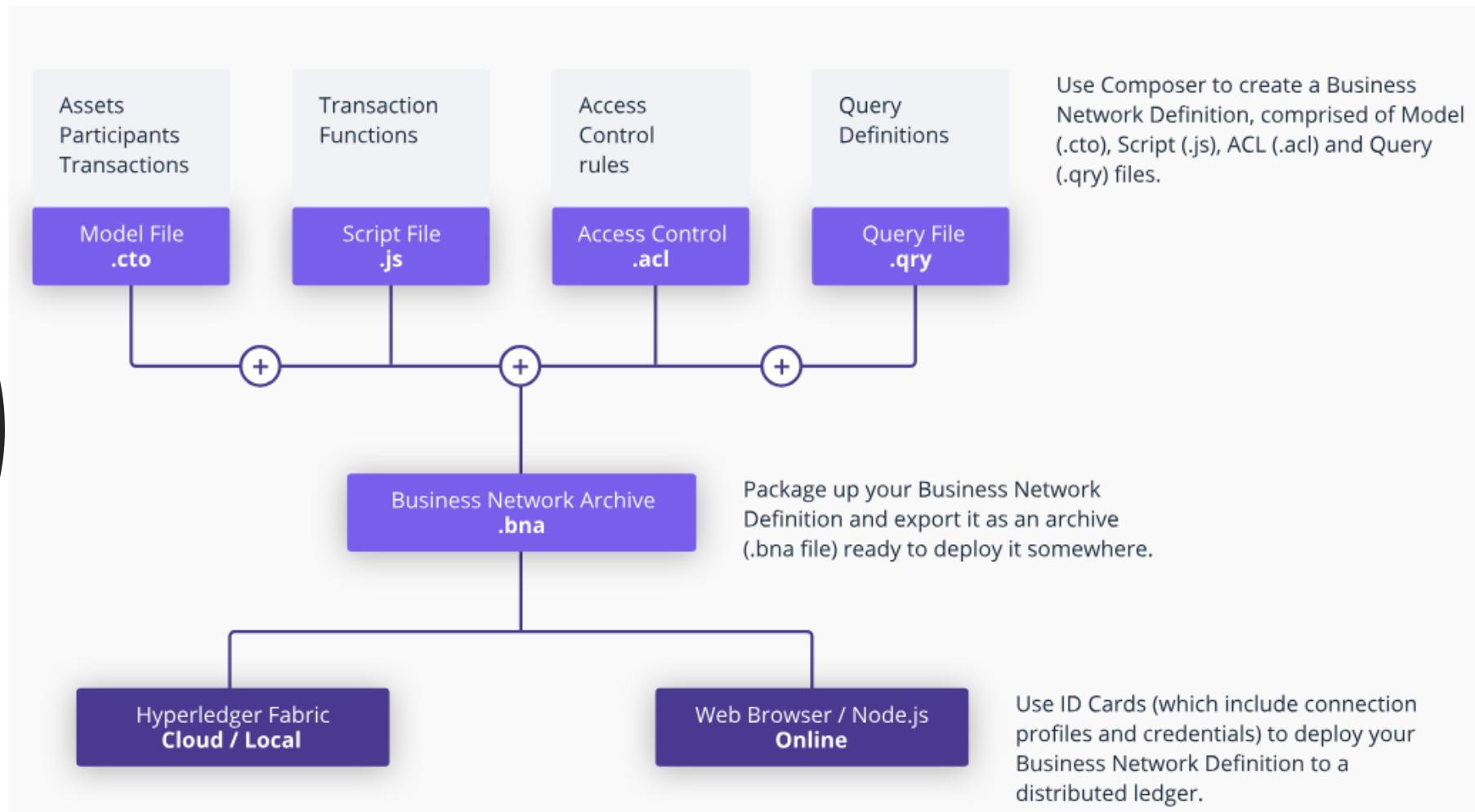


comparatively easy to write
smart contracts using model file
(.cto) and angular javascript

3 Main components

- **Composer CLI**
 - Command-line interface tool to deploy a business network file to Hyperledger Fabric
 - Put simply, all administration activity can be handled from composer CLI. Eg. Creation of a new peer
- **Composer Playground**
 - GUI version of composer CLI.
 - Provides developer easy functionalities to develop application and test it.
- **Composer REST server**
 - Node.js based server which exposes business networks as a REST API

Files in Business network Archive





Starting from
scratch

Setting up the environment

- Download and Install Prerequisites for Installing Hyperledger Fabric and Composer
 - curl -O <https://hyperledger.github.io/composer/latest/prereqs-ubuntu.sh>
 - chmod u+x prereqs-ubuntu.sh
 - ./prereqs-ubuntu.sh
- Logout and then login again to the system
- Install Composer CLI tools
 - npm install -g composer-cli
- Install Composer Rest Server
 - npm install -g composer-rest-server
- Install Hyperledger composer
 - npm install -g generator-hyperledger-composer
- Install yeoman (tool for generating initial templates for business network applications)
 - npm install -g yo
- Install Composer Playground
 - npm install -g composer-playground
- Install Hyperledger Fabric
 - mkdir ~/fabric-tools && cd ~/fabric-tools
 - cd fabric-tools
 - curl -O <https://raw.githubusercontent.com/hyperledger/composer-tools/master/packages/fabric-dev-servers/fabric-dev-servers.zip>
 - unzip fabric-dev-servers.zip
 - ./downloadFabric.sh #to install runtime of the local hyperledger fabric

Few more commands

- Start the Fabric network
 - ./startFabric.sh
- Create Peer Admin Network Card
 - ./createPeerAdminCard.sh
- To see the cards list:
 - composer card list

```
devk@ubuntu:~$ composer card list
The following Business Network Cards are available:

Connection Profile: hlfv1

+-----+-----+-----+
| Card Name | UserID | Business Network |
+-----+-----+-----+
| PeerAdmin@hlfv1 | PeerAdmin |          |
+-----+-----+-----+
```

- To start composer Playground
 - Composer-playground

localhost:8080/login

Hyperledger Composer Playground

My Business Networks

Connection: hlfv1

P

PeerAdmin@hlfv1

User ID

PeerAdmin

BUSINESS NETWORK

none

Connect now →

Import Business Network Card

Create Business Network Card

Deploy a new business network

Connection: Web Browser

localhost:8080/login

Hyperledger Composer Playground

My Business Networks

Connection: hlfv1

P

PeerAdmin@hlfv1

User ID

PeerAdmin

Business Network

none

Connect now →

Import Business Network Card

Create Business Network Card

Deploy a new business network

Connection: Web Browser

1. BASIC INFORMATION

Give your new Business Network a name:

healthsector

healthcare sector record management

Describe what your Business Network will be used for:

Give the network admin card that will be created a name

admin@healthsector

2. MODEL NETWORK STARTER TEMPLATE

Choose a Business Network Definition to start with:

Choose a sample to play with, start a new project, or import your previous work



basic-sample-network



empty-business-network



Drop here to upload or [browse](#)

Samples on npm



marbles-network



perishable-network



pii-network



trade-network



vehicle-lifecycle-network



vehicle-manufacture-network

3. CREDENTIALS FOR NETWORK ADMINISTRATOR

You must provide credentials in one of the following formats before you deploy this business network

The credentials will be used to access the business network once it is deployed

Certificates

Required here are certificate and private key files.

ID and Secret

These can be created when accessing a business network.

An Enrollment ID and Secret must be created by someone who already has access to the Business Network you are connecting to.

Enrollment ID

admin

Enrollment Secret

Give your new Business Network a name:

Healthsector

CREATE

healthcare sector record management

Describe what your Business Network will be used for:

healthsector

healthcare sector record management

Give the network admin card that will be created a name

admin@healthsector

CONNECTION PROFILE

Choose a Business Network Definition to start with:

BASED ON
empty-business-network

Choose a sample to play with, start a new project, or import your previous work

Start from scratch with a blank business network



basic-sample-network



empty-business-network



Drop here to upload or [browse](#)

Samples on npm

Deploy

My Business Networks

Connection: hlfv1



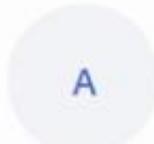
PeerAdmin@hlfv1

USER ID
PeerAdmin

BUSINESS NETWORK
none

[Connect now →](#)



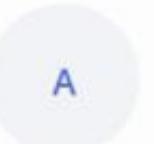
admin@healthcare

USER ID
admin

BUSINESS NETWORK
healthcare

[Connect now →](#)



admin@healthsector

USER ID
admin

BUSINESS NETWORK
healthsector

[Connect now →](#)



Deploy a new business network

My Business Networks

Connection: hlfv1



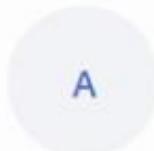
PeerAdmin@hlfv1

USER ID
PeerAdmin

BUSINESS NETWORK
none

[Connect now →](#)



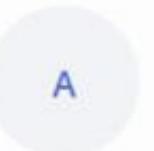
admin@healthcare

USER ID
admin

BUSINESS NETWORK
healthcare

[Connect now →](#)



admin@healthsector

USER ID
admin

BUSINESS NETWORK
healthsector

[Connect now →](#)



Deploy a new business network

localhost:8080/editor

hlfv1 healthsector admin

Define Test

FILES

About README.md, package.json

Model File models/org.healthsector.cto

Script File lib/AppointmentConfirm.js

Script File lib/CreateRecipe.js

Script File lib/InsuranceApproval.js

Script File lib/InsuranceRequest.js

Script File lib/OrderShipment.js

Add a file... Export

UPDATE NETWORK

From: 0.0.1

To: 0.0.2-deploy.0

Deploy changes

Use input, press Ctrl+Alt

Model File models/org.healthsector.cto

15 namespace org.healthsector
16
17 asset Recipe identified by contractId{
18 o String contractId
19 --> Patient patient
20 --> Physician physician
21 --> Appointment appointment
22 --> PreDoctorCheckup PatientCheckupList
23 o String prescriptionDate
24 o Double tablets
25 o Double dosage
26 o ProductType type
27 o String notes
28 o Double consultingCharges
29 }
30
31 asset Appointment identified by appointmentID{
32 o String appointmentID
33 o String RequestedTime
34 o String notes
35 o appointmentWithInsurance InsuranceFlag
36 --> Insuranceledger InsuranceId optional
37 --> Patient patient
38 --> Physician confirmedBy optional
39 o AppointmentStatus status
40 o DiseaseClassification diseaseType

Everything looks good!

Any problems detected in your code would be reported here

FILE

localhost:8080/test

hlfv1 healthsector admin

Define Test

PARTICIPANTS

Clerk

HealthInsuranceCompany

Nurse

Patient

Physician

Vendor

ASSETS

Appointment

InsuranceBilltoDoct

Insurancedledger

Order

PreDoctorCheckup

Recipe

RecipeBill

+ Create New Participant

Participant registry for org.healthsector.Clerk

ID Data

This registry is empty!

To create resources in this registry click create new at the top of this page

se input, press Ctrl+Alt

Firefox, Mail, Calendar, Google Chrome, Sync, Network, File Manager, Settings, System, Task View, Taskbar icons

Back to Healthcare records management

- 6 type of participants, 7 types of Assets and 9 Types of transactions

Add models of
Participants, Assets and
transaction
(in .cto file)

Patient and Nurse

Model File [models/syngxchain.cto](#) 

```
126 participant Patient identified by PMI{  
127   o String PMI  
128   o String FirstName  
129   o String LastName  
130   o String email  
131   o String phone  
132   o Gender gender  
133   o Integer Age  
134   o Double accountBalance  
135   o Address address  
136   o Double DueBalance optional  
137 }  
138  
139 participant Nurse identified by NSI{  
140   o String NSI  
141   o String FirstName  
142   o String LastName  
143   o String email  
144   o String phone  
145   o Gender gender  
146   o Integer Age  
147   o Address address  
148   o String HighestDegree  
149 }  
150
```

Asset

```
30  
31     asset Appointment identified by appointmentID{  
32         o String appointmentID  
33         o String RequestedTime  
34         o String notes  
35         o appointmentWithInsurance InsuranceFlag  
36             --> Insuranceledger InsuranceId optional  
37             --> Patient patient  
38             --> Physician confirmedBy optional  
39         o AppointmentStatus status  
40         o DiseaseClassification diseaseType  
41     }  
42  
43     enum appointmentWithInsurance{  
44         o Yes  
45         o No  
46     }  
47
```

Asset

```
30  
31     asset Appointment identified by appointmentID{  
32         o String appointmentID  
33         o String RequestedTime  
34         o String notes  
35         o appointmentWithInsurance InsuranceFlag  
36             --> Insuranceledger InsuranceId optional  
37             --> Patient patient  
38             --> Physician confirmedBy optional  
39         o AppointmentStatus status  
40         o DiseaseClassification diseaseType  
41     }  
42  
43     enum appointmentWithInsurance{  
44         o Yes  
45         o No  
46     }  
47
```

Relationship operator

```
--> Patient patient
```

- Tuple composed of :
 - Namespace of the type being referenced
 - Type name of the type being referenced
 - Eg. Relationship could be to
org.healthsector.Patient#PATIENT1

```
197  
198     transaction requestInsurance{  
199         --> HealthInsuranceCompany owner  
200         --> Patient subscriber  
201         o subsplan subscriptionPlan  
202     }  
203
```

Transaction model

Writing transaction
processor function or
smart contracts

Appointment Confirmation

Script File lib/AppointmentConfirm.js 

```
1  /**
2   * New script file
3   */
4
5  /**
6   * Physicians need to confirm appointment
7   * @param {org.healthsector.confirmAppointment} confirmation
8   * @transaction
9  */
10
11
12 function ConfirmAppointment(confirmation){
13
14     var requestDoctor = confirmation.doctor;
15     var requestAppoint = confirmation.appoint;
16     console.log('sudip', confirmation.appoint.diseaseType);
17     var diseasegroup = confirmation.appoint.diseaseType;
18     var insuranceFlag = confirmation.appoint.InsuranceFlag;
19
20     var doctorSpecialist = requestDoctor.Specialization;
21     if(insuranceFlag ==='Yes'){
22         var insurancedet = confirmation.appoint.InsuranceId;
23         var insurPatientID = insurancedet.subscriber.PMI;
24         var reqPatient = confirmation.appoint.patient.PMI;
25         var insuranceStatus = insurancedet.status;
26     }
}
```

 Everything looks good!

Any problems detected in your code would be reported here

AppointmentConfirmation

Script File lib/AppointmentConfirm.js 

```
26     if(insurPatientID === reqPatient && insuranceStatus ==='Approved'){
27       if(diseasegroup === doctorSpecialist){
28         if(requestAppoint.status === 'Pending'){
29           return getAssetRegistry('org.healthsector.Appointment')
30             .then(function(appoint){
31               requestAppoint.status = 'Confirmed';
32               requestAppoint.confirmedBy = requestDoctor;
33               return appoint.update(requestAppoint);
34               var appointmentEvent = getFactory();
35               var notification = appointmentEvent.newEvent('org.healthsector', 'AppointmentConfirmation');
36               notification.appointment = requestAppoint;
37               notification.patient = requestAppoint.patient;
38               notification.doctor = requestDoctor;
39               emit(notification);
40             })
41             .catch(function(error){
42               // Add optional error handling here
43               throw new Error(error);
44             });
45           }else{
46             throw new Error('Appointment is already Confirmed');
47           }
48         }
49       }else{
50         throw new Error('Your specialization does not match with Patient disease type');
51       }
52     }
```

AppointmentConfirmation

Script File lib/AppointmentConfirm.js

```
52      }
53  }else{
54      throw new Error('Patient dont have valid insurance');
55  }
56 }else{
57     if(diseasegroup === doctorSpecialist){
58         if(requestAppoint.status === 'Pending'){
59             return getAssetRegistry('org.healthsector.Appointment')
60             .then(function(appoint){
61                 requestAppoint.status = 'Confirmed';
62                 requestAppoint.confirmedBy = requestDoctor;
63                 return appoint.update(requestAppoint);
64                 var appointmentEvent = getFactory();
65                 var notification = appointmentEvent.newEvent('org.healthsector', 'AppointmentConfirmation');
66                 notification.appointment = requestAppoint;
67                 notification.patient = requestAppoint.patient;
68                 notification.doctor = requestDoctor;
69                 emit(notification);
70             })
71             .catch(function(error){
72                 // Add optional error handling here
73                 throw new Error (error);
74             });
75     }else{
76         throw new Error('Appointment is already Confirmed');
77     }
}
```

Everything looks good!

Any problems detected in your code would be reported here

AppointmentConfirmation

Script File lib/AppointmentConfirm.js

```
59         return getAssetRegstry('org.healthsector.Appointment')
60     .then(function(appoint){
61         requestAppoint.status = 'Confirmed';
62         requestAppoint.confirmedBy = requestDoctor;
63         return appoint.update(requestAppoint);
64         var appointmentEvent = getFactory();
65         var notification = appointmentEvent.newEvent('org.healthsector', 'AppointmentConfirmation');
66         notification.appointment = requestAppoint;
67         notification.patient = requestAppoint.patient;
68         notification.doctor = requestDoctor;
69         emit(notification);
70     })
71     .catch(function(error){
72         // Add optional error handling here
73         throw new Error (error);
74     });
75
76     }else{
77         throw new Error('Appointment is already Confirmed');
78     }
79 }
80 else{
81     throw new Error('Your specialization does not match with Patient disease type');
82 }
83 }
84 }
```

 **Everything looks good!**

Any problems detected in your code would be reported [here](#)

Access control list

```
14
15 rule NetworkAdminUser {
16   description: "Grant business network administrators full access to user resources"
17   participant: "org.hyperledger.composer.system.NetworkAdmin"
18   operation: ALL
19   resource: "/**"
20   action: ALLOW
21 }
22
23 rule NetworkAdminSystem {
24   description: "Grant business network administrators full access to system resources"
25   participant: "org.hyperledger.composer.system.NetworkAdmin"
26   operation: ALL
27   resource: "org.hyperledger.composer.system.**"
28   action: ALLOW
29 }
30
```



Everything looks good!

Any problems detected in your code would be reported here

Generating the bna with CLI

Template generatrion for project with yeoman

```
devk@ubuntu:~/meena/care-angular$ yo
devk@ubuntu:~$ yo hyperledger-composer
Welcome to the Hyperledger Composer project generator
? Please select the type of project: Business Network
You can run this generator using: 'yo hyperledger-composer:businessnetwork'
Welcome to the business network generator
? Business network name: healthsector
? Description: Application of blockchain use in healthsector
? Author name: devendra
? Author email: devendra.meena2@gmail.com
? License: Apache-2.0
? Namespace: org.healthsector
? Do you want to generate an empty template network? Yes: generate an empty template network
  create package.json
  create README.md
  create models/org.healthsector.cto
  create permissions.acl
  create .eslintrc.yml
  create .gitignore
```

Creating the bna after writing the code

```
devk@ubuntu:~/healthsector$ composer archive create -t dir -n .
Creating Business Network Archive

Looking for package.json of Business Network Definition
Input directory: /home/devk/healthsector

Found:
  Description: Application of blockchain use in healthsector
  Name: healthsector
  Identifier: healthsector@0.0.1

Written Business Network Definition Archive file to
Output file: healthsector@0.0.1.bna

Command succeeded
```

Install the bna on Admincard

```
devk@ubuntu:~/healthsector$ composer network install --archiveFile healthsector@0.0.1.bna --card PeerAdmin@hlfv1
✓ Installing business network. This may take a minute...
Successfully installed business network healthsector, version 0.0.1

Command succeeded
```

Starting the network

```
devk@ubuntu:~/healthsector$ composer network start --networkName healthsector --networkVersion 0.0.1 --card PeerAdmin@hlfv1 --networkAdmin admin --networkAdminEnrollSecret adminpw
Starting business network healthsector at version 0.0.1

Processing these Network Admins:
  userName: admin

✓ Starting business network definition. This may take a minute...
Successfully created business network card:
  Filename: admin@healthsector.card

Command succeeded
```

Ping to the network to check if it's running

```
devk@ubuntu:~/healthsector$ composer network ping --card admin@healthsector
The connection to the network was successfully tested: healthsector
  Business network version: 0.0.1
  Composer runtime version: 0.20.7
  participant: org.hyperledger.composer.system.NetworkAdmin#admin
  identity: org.hyperledger.composer.system.Identity#b7918238f59affa3b55696f7146c9b25b2099d02b77706dddc4132ebddce9b56
Command succeeded
```

Generating Angular frontend with yeoman

```
devk@ubuntu:~/healthsector$ yo
? 'Allo devk! What would you like to do? Hyperledger Composer

Make sure you are in the directory you want to scaffold into.
This generator can also be run with: yo hyperledger-composer

Welcome to the Hyperledger Composer project generator
? Please select the type of project: Angular
You can run this generator using: 'yo hyperledger-composer:angular'
Welcome to the Hyperledger Composer Angular project generator
? Do you want to connect to a running Business Network? Yes
? Project name: healthsector-angular
? Description: Angular frontend for healthsector application
? Author name: devendra
? Author email: devendra.meena2@gmail.com
? License: Apache-2.0
? Name of the Business Network card: admin@healthsector.card
? Do you want to generate a new REST API or connect to an existing REST API? Generate a new REST API
? REST server port: 3000
? Should namespaces be used in the generated REST API? Always use namespaces
```

healthsector@0.0.1.bna

healthsector

localhost:4200

Assets Participants Transactions

- Patient
- Nurse
- HealthInsuranceCompany
- Clerk
- Physician

healthsector



Application in Action
with Composer
playground

hlfv1 healthsector

Define Test

admin ▾

PARTICIPANTS

Clerk

+ Create New Participant

HealthInsuranceCompany

Nurse

Patient

Physician

Vendor

ASSETS

Appointment

InsuranceBilltoDoc

Insuranceledger

Order

PreDoctorCheckup

Recipe

RecipeBill

Participant registry for org.healthsector.Clerk

ID Data

This registry is empty!

To create resources in this registry click create new at the top of this page

se input, press Ctrl+Alt



hlfv1 healthsector

Define Test admin ▾

PARTICIPANTS

- Clerk
- HealthInsuranceCompany
- Nurse
- Patient
- Physician
- Vendor

ASSETS

- Appointment
- InsuranceBilltoDoct
- Insuranceledger
- Order
- PreDoctorCheckup
- Recipe
- RecipeBill

Participant registry for org.healthsector.Clerk

+ Create New Participant

ID Data

This registry is empty!

To create resources in this registry click create new at the top of this page



se input, press Ctrl+Alt

Add clerk with id "CLERK1"

"\$class": "org.healthsector.Clerk",
"CSI": "CLERK1",

Create New Participant

In registry: org.healthsector.Clerk

JSON Data Preview

```
1  {  
2    "$class": "org.healthsector.Clerk",  
3    "CSI": "CLERK1",  
4    "FirstName": "ram",  
5    "LastName": "kumar",  
6    "email": "ram@gmail.com",  
7    "phone": "8787878787",  
8    "gender": "Male",  
9    "Age": 28,  
10   "address": {  
11     "$class": "org.healthsector.Address",  
12     "city": "Kanpur",  
13     "country": "India",  
14     "street": "Hall 12",  
15     "zip": "208016"  
16   }  
}
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

[Cancel](#) [Create New](#)

PARTICIPANTS

Participant registry for org.healthsector.Clerk

[+ Create New Participant](#)

Clerk

HealthinsuranceCompany

Nurse

Patient

Physician

Vendor

ASSETS

Appointment

InsuranceBilltoDoc

Insuranceledger

Order

PreDoctorCheckup

Recipe

RecipeBill

ID

Data

CLERK1

```
{  
    "$class": "org.healthsector.Clerk",  
    "CSI": "CLERK1",  
    "FirstName": "ram",  
    "LastName": "kumar",  
    "email": "ram@gmail.com",  
    "phone": "8787878787",  
    "gender": "Male",  
    "Age": 28,  
    "address": {  
        "$class": "org.healthsector.Address",  
        "city": "Kanpur",  
        "country": "India",  
        "street": "Hall 12",  
        "zip": "208016"  
    },  
    "HighestDegree": "Graduation"  
}
```

[Collapse](#)

localhost:8080/test

PARTICIPANTS

Clerk

HealthInsuranceCompany

Nurse

Patient

Physician

Vendor

ASSETS

Appointment

InsuranceBilltoDoct

Insuranceledger

Order

PreDoctorCheckup

Recipe

RecipeBill

TRANSACTIONS

Participant registry for org.healthsector.HealthInsuranceCompany

+ Create N

ID	Data
----	------

This registry is empty!

To create resources in this registry click create new at the top of this page



Add Health Insurance company with id HISCOMP1

In registry: org.healthsector.HealthInsuranceCompany

JSON Data Preview

```
2   "$class": "org.healthsector.HealthInsuranceCompany",
3   "HSI": "HSICOMP1",
4   "CompanyName": "Insurance comp1",
5   "License": "5656",
6   "email": "comp@gmail.com",
7   "phone": "8989898989",
8   "ratings": 4.5,
9   "address": {
10    "$class": "org.healthsector.Address",
11    "city": "Delhi",
12    "country": "India",
13    "street": "Chandni Chowk",
14    "zip": "568945"
15  },
16  "AccountBalance": 500000
17 }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

[Cancel](#)

[Create New](#)

HealthInsuranceCompany

Participant registry for org.healthsector.HealthInsuranceCompany

+ Create New Participant

ID

Data

HSICOMP1

```
{  
    "$class": "org.healthsector.HealthInsuranceCompany",  
    "HSI": "HSICOMP1",  
    "CompanyName": "Insurance compl",  
    "License": "5656",  
    "email": "comp@gmail.com",  
    "phone": "8989898989",  
    "ratings": 4,  
    "address": {  
        "$class": "org.healthsector.Address",  
        "city": "Delhi",  
        "country": "India",  
        "street": "Chandni Chowk",  
        "zip": "568945"  
    },  
    "AccountBalance": 500000  
}
```



Collapse

Add Nurse with id NURSE1

In registry: org.healthsector.Nurse

JSON Data Preview

```
1  {
2    "$class": "org.healthsector.Nurse",
3    "NSI": "NURSE1",
4    "FirstName": "Pooja",
5    "LastName": "sharma",
6    "email": "pooja@gmail.com",
7    "phone": "7878787878",
8    "gender": "Female",
9    "Age": 35,
10   "address": {
11     "$class": "org.healthsector.Address",
12     "city": "Jaipur",
13     "country": "India",
14     "street": "Jagatpura",
15     "zip": "208089"
16   }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

Cancel

Create New

NURSE1



```
{  
    "$class": "org.healthsector.Nurse",  
    "NSI": "NURSE1",  
    "FirstName": "Pooja",  
    "LastName": "sharma",  
    "email": "pooja@gmail.com",  
    "phone": "7878787878",  
    "gender": "Female",  
    "Age": 35,  
    "address": {  
        "$class": "org.healthsector.Address",  
        "city": "Jaipur",  
        "country": "India",  
        "street": "Jagatpura",  
        "zip": "208089"  
    },  
    "HighestDegree": "Interschool"  
}
```

Collapse

NURSE

Patient

localhost:8080/test

hlfv1 healthsector admin

PARTICIPANTS

- Clerk
- HealthInsuranceCompany
- Nurse
- Patient**
- Physician
- Vendor

ASSETS

- Appointment
- InsuranceBilltoDoc
- Insurancedledger

Participant registry for org.healthsector.Patient

+ Create New Participant

ID	Data
	

This registry is empty!

To create resources in this registry click create new at the top of this page

Create Patient with id PATIENT1

Create New Participant

In registry: org.healthsector.Patient

JSON Data Preview

```
2   "$class": "org.healthsector.Patient",
3   "PMI": "PATIENT1",
4   "FirstName": "Shyam",
5   "LastName": "Lal",
6   "email": "shyam@gmail.com",
7   "phone": "4545454545",
8   "gender": "Male",
9   "Age": 45,
10  "accountBalance": 45000,
11  "address": {
12    "$class": "org.healthsector.Address",
13    "city": "Kanpur",
14    "country": "India",
15    "street": "Gomti Nagar",
16    "zip": "208016"
17  }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

Cancel

Create New

PATIENT1

```
{  
    "$class": "org.healthsector.Patient",  
    "PMI": "PATIENT1",  
    "FirstName": "Shyam",  
    "LastName": "Lal",  
    "email": "shyam@gmail.com",  
    "phone": "4545454545",  
    "gender": "Male",  
    "Age": 45,  
    "accountBalance": 45000,  
    "address": {  
        "$class": "org.healthsector.Address",  
        "city": "Kanpur",  
        "country": "India",  
        "street": "Gomti Nagar",  
        "zip": "208016"  
    }  
}
```

Collapse

Patient

localhost:8080/test

hifv1 healthsector

Define Test admin

PARTICIPANTS

Clerk

HealthInsuranceCompany

Nurse

Patient

Physician

Vendor

ASSETS

Appointment

Participant registry for org.healthsector.Physician

+ Create New Participant

ID	Data
	

This registry is empty!

To create resources in this registry click create new at the top of this page

Add doctor with id DOC1

Create New Participant

In registry: org.healthsector.Physician

JSON Data Preview

```
1  {
2    "$class": "org.healthsector.Physician",
3    "NPI": "DOC1",
4    "LicenseNo": "1234ABCD",
5    "HighestDegree": "FRCS",
6    "Specialization": "Eye",
7    "FirstName": "Ravi",
8    "LastName": "Wadhwani",
9    "email": "ravi@gmail.com",
10   "phone": "2323232323",
11   "gender": "Male",
12   "Age": 36,
13   "accountBalance": 120000,
14   "address": {
15     "$class": "org.healthsector.Address",
16     "city": "Kanpur"
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

[Cancel](#)

[Create New](#)

Participant registry for org.healthsector.Physician

[+ Create New Participant](#)

ID

Data

DOC1

```
{  
    "$class": "org.healthsector.Physician",  
    "NPI": "DOC1",  
    "LicenseNo": "1234ABCD",  
    "HighestDegree": "FRCS",  
    "Specialization": "Eye",  
    "FirstName": "Ravi",  
    "LastName": "Wadhani",  
    "email": "ravi@gmail.com",  
    "phone": "2323232323",  
    "gender": "Male",  
    "Age": 36,  
    "accountBalance": 120000,  
    "address": {  
        "$class": "org.healthsector.Address",  
        "city": "Kanpur",  
        "country": "India",  
        "street": "Gomti Nagar",  
        "zip": "208015"  
    }  
}
```

[Collapse](#)

localhost:8080/test

hlfv1 healthsector Define Test admin

PARTICIPANTS Participant registry for org.healthsector.Vendor + Create New Participant

Clerk

HealthInsuranceCompany

Nurse

Patient

Physician

Vendor

ASSETS

Appointment

InsuranceBilltoDoct

Insuranceledger

ID Data

This registry is empty!

To create resources in this registry click create new at the top of this page



Pharmacy

Add pharmacy with id VENDOR1

Create New Participant

In registry: org.healthsector.Vendor

JSON Data Preview

```
1  {
2    "$class": "org.healthsector.Vendor",
3    "vendorId": "VENDOR1",
4    "companyName": "MEDICINECOMP1",
5    "regdno": "1234PQRS",
6    "email": "pharmacy@gmail.com",
7    "phone": "7575757575",
8    "accountBalance": 300000,
9    "rating": 4.2,
10   "address": {
11     "$class": "org.healthsector.Address",
12     "city": "Kanpur",
13     "country": "India",
14     "street": "Bada Chouraha",
15     "zip": "208013"
16   }
}
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

[Cancel](#)

[Create New](#)

ost:8080/test

VENDOR1

```
{  
    "$class": "org.healthsector.Vendor",  
    "vendorId": "VENDOR1",  
    "companyName": "MEDICINECOMP1",  
    "regdno": "1234PQRS",  
    "email": "pharmacy@gmail.com",  
    "phone": "7575757575",  
    "accountBalance": 300000,  
    "rating": 4,  
    "address": {  
        "$class": "org.healthsector.Address",  
        "city": "Kanpur",  
        "country": "India",  
        "street": "Bada Chouraha",  
        "zip": "208013"  
    }  
}
```

Collapse

Pharmacy

Submit a Transaction

[Recipe](#)

[RecipeBill](#)

[TRANSACTIONS](#)

[All Transactions](#)

[Submit Transaction](#)

... input process Ctrl+Alt

PATIENT1
requests
Insurance from
HSICOMP1

Submit Transaction

Transaction Type **requestInsurance**

JSON Data Preview

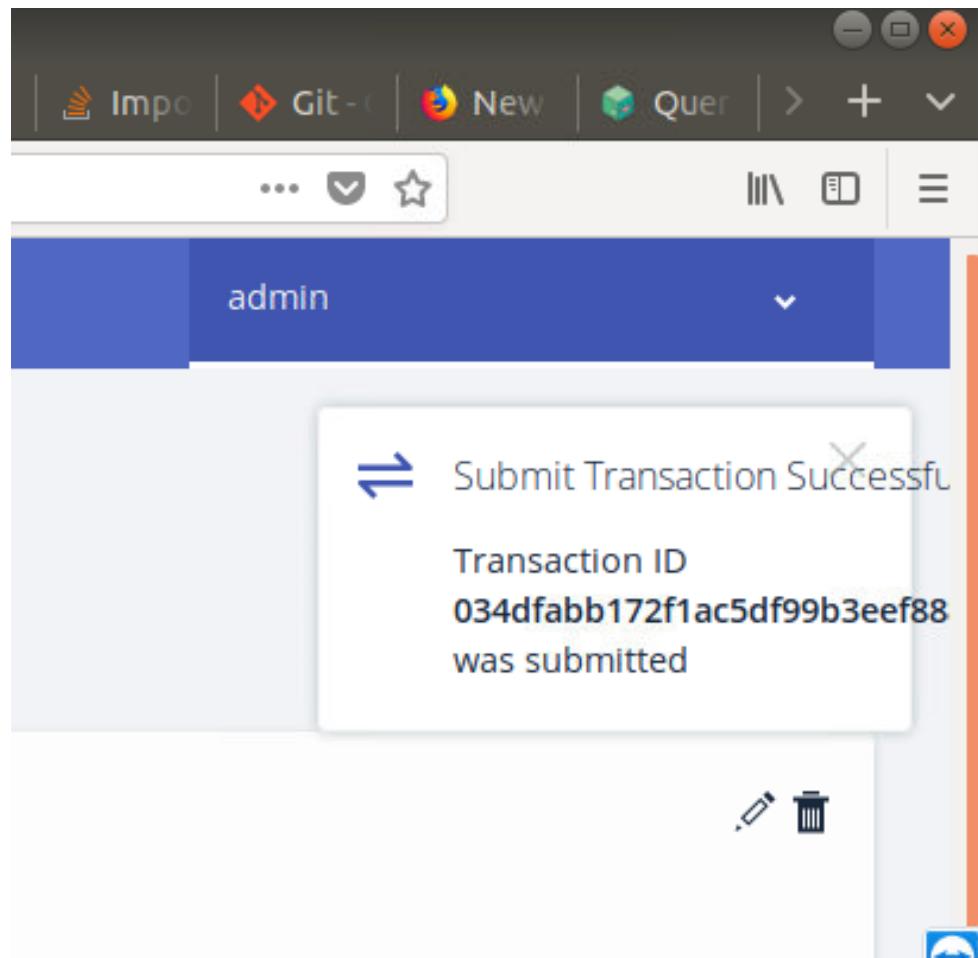
```
1  {  
2    "$class": "org.healthsector.requestInsurance",  
3    "owner": "resource:org.healthsector.HealthInsuranceCompany#HSICOMP1",  
4    "subscriber": "resource:org.healthsector.Patient#PATIENT1",  
5    "subscriptionPlan": "Silver"  
6  }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

Cancel

Submit



Wed 17:20

Hyperledger Composer - Mozilla Firefox

localhost:8080/test

Date, Time	Entry Type	Participant	
2019-03-13, 17:19:47	requestInsurance	admin (NetworkAdmin)	view record
2019-03-13, 17:17:13	AddParticipant	admin (NetworkAdmin)	view record
2019-03-13, 17:14:50	AddParticipant	admin (NetworkAdmin)	view record
2019-03-13, 17:12:00	AddParticipant	admin (NetworkAdmin)	view record
2019-03-13, 17:05:13	AddParticipant	admin (NetworkAdmin)	view record
2019-03-13, 16:54:04	AddParticipant	admin (NetworkAdmin)	view record
2019-03-13, 16:43:24	AddParticipant	admin (NetworkAdmin)	view record

Checking the Record

Historian Record

Transaction Events (0)

```
1  {
2    "$class": "org.healthsector.requestInsurance",
3    "owner": "resource:org.healthsector.HealthInsuranceCompany#HSICOMP1",
4    "subscriber": "resource:org.healthsector.Patient#PATIENT1",
5    "subscriptionPlan": "Silver",
6    "transactionId":
7      "034dfabb172f1ac5df99b3eef888379656784f2978ced0680d49216d4dd93db2",
8    "timestamp": "2019-03-14T00:19:47.575Z"
}
```

:alhost:8080/test#

Asset registry for org.healthsector.Insuranceledger

ID	Data
HSICOMP1PATIENT1	<pre>{ "\$class": "org.healthsector.Insuranceledger", "insuranceId": "HSICOMP1PATIENT1", "owner": "resource:org.healthsector.HealthInsuranceCompany#HSICOMP1", "subscriber": "resource:org.healthsector.Patient#PATIENT1", "subscriptionPlan": "Silver", "Coverage": 5000, "Validity": "1 year", "SubscriptionCharge": 1000.89, "status": "Pending" }</pre> <div style="text-align: right;">Collapse</div>

Insuranceledger

Approve Insurance

Submit Transaction

Transaction Type **approveInsurance** 

JSON Data Preview

```
1  {
2    "$class": "org.healthsector.approveInsurance",
3    "owner": "resource:org.healthsector.HealthInsuranceCompany#HSICOMP1",
4    "insuranceDetails":
5      "resource:org.healthsector.Insuranceledger#HSICOMP1PATIENT1"
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

[Cancel](#)

[Submit](#)

Define Test admin

Asset registry for org.healthsector.Insuranceledger

ID	Data
HSICOMP1PATIENT1	<pre>{ "\$class": "org.healthsector.Insuranceledger", "insuranceId": "HSICOMP1PATIENT1", "owner": "resource:org.healthsector.HealthInsuranceCompany#HSICOMP1", "subscriber": "resource:org.healthsector.Patient#PATIENT1", "subscriptionPlan": "Silver", "Coverage": 5000, "Validity": "1 year", "SubscriptionCharge": 1000.89, "status": "Approved" }</pre> <p>Collapse</p> <p>Edit Delete</p>

Submit Transaction Successful
Transaction ID
c04f717cb9bab3e2fa7202d8f2b
was submitted

Insuranceledger

Participant registry for org.healthsector.Patient

ID

Data

PATIENT1

```
{  
    "$class": "org.healthsector.Patient",  
    "PMI": "PATIENT1",  
    "FirstName": "Shyam",  
    "LastName": "Lal",  
    "email": "shyam@gmail.com",  
    "phone": "4545454545",  
    "gender": "Male",  
    "Age": 45,  
    "accountBalance": 43999.11,  
    "address": {  
        "$class": "org.healthsector.Address",  
        "city": "Kanpur",  
        "country": "India",  
        "street": "Gomti Nagar",  
        "zip": "208016"  
    }  
}
```

Collapse

Participant registry for org.healthsector.HealthInsuranceCompany

ID	Data
HSICOMP1	<pre>{ "\$class": "org.healthsector.HealthInsuranceCompany", "HSI": "HSICOMP1", "CompanyName": "Insurance compl", "License": "5656", "email": "comp@gmail.com", "phone": "8989898989", "ratings": 4, "address": { "\$class": "org.healthsector.Address", "city": "Delhi", "country": "India", "street": "Chandni Chowk", "zip": "568945" }, "AccountBalance": 501000.89 }</pre>

Collapse

localhost:8080/test#

hlfv1 healthsector

Define Test

PARTICIPANTS

Clerk

HealthInsuranceCompany

Nurse

Patient

Physician

Vendor

ASSETS

Appointment

InsuranceBilltoDoct

Insurancedledger

Asset registry for org.healthsector.Appointment

ID	Data
----	------



This registry is empty!

To create resources in this registry click create new at the top

Create Appointment with id APP01

Create New Asset

In registry: org.healthsector.Appointment

JSON Data Preview

```
1  {
2    "$class": "org.healthsector.Appointment",
3    "appointmentID": "APP01",
4    "RequestedTime": "15 Mar, 2019",
5    "notes": "I am having Glaucoma in my eyes",
6    "InsuranceFlag": "Yes",
7    "InsuranceId":
8    "resource:org.healthsector.Insuranceledger#HSICOMP1PATIENT1",
9    "patient": "resource:org.healthsector.Patient#PATIENT1",
10   "confirmedBy": "resource:org.healthsector.Physician#DOC1",
11   "status": "Pending",
12   "diseaseType": "Eye"
13 }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

Cancel

Create New

Asset registry for org.healthsector.Appointment

ID	Data
APP01	<pre>{ "\$class": "org.healthsector.Appointment", "appointmentID": "APP01", "RequestedTime": "15 Mar, 2019", "notes": "I am having Glaucoma in my eyes", "InsuranceFlag": "Yes", "InsuranceId": "resource:org.healthsector.Insuranceledger#HSICOMP1PATIENT1", "patient": "resource:org.healthsector.Patient#PATIENT1", "confirmedBy": "resource:org.healthsector.Physician#DOC1", "status": "Pending", "diseaseType": "Eye" }</pre> <div style="text-align: right; margin-top: -20px;">Collapse</div>

Wed 17:35

Hyperledger Composer - Mozilla Firefox

Date, Time	Entry Type	Participant	
2019-03-13, 17:35:32	AddAsset	admin (NetworkAdmin)	view record
2019-03-13, 17:23:12	approvelInsurance	admin (NetworkAdmin)	view record
2019-03-13, 17:19:47	requestInsurance	admin (NetworkAdmin)	view record
2019-03-13, 17:17:13	AddParticipant	admin (NetworkAdmin)	view record
2019-03-13, 17:14:50	AddParticipant	admin (NetworkAdmin)	view record
2019-03-13, 17:12:00	AddParticipant	admin (NetworkAdmin)	view record
2019-03-13, 17:05:13	AddParticipant	admin (NetworkAdmin)	view record

Appointment in Records

Historian Record

Transaction Events (0)

```
9     "insuranceFlag": "Yes",
10    "InsuranceId":
11      "resource:org.healthsector.Insuranceledger#HSICOMP1PATIENT1",
12      "patient": "resource:org.healthsector.Patient#PATIENT1",
13      "confirmedBy": "resource:org.healthsector.Physician#DOC1",
14      "status": "Pending",
15      "diseaseType": "Eye"
16    ],
17    "targetRegistry":
18      "resource:org.hyperledger.composer.system.AssetRegistry#org.healthsector.Appointment",
19    "transactionId":
20      "5c2438c5c33296b563ca30ef280f1c7ee47b859da2e02e452cea50c122cc3020",
21    "timestamp": "2019-03-14T00:35:32.753Z"
22  }
```

Confirm Appointment

Submit Transaction

Transaction Type **confirmAppointment** ▾

JSON Data Preview

```
1  {
2    "$class": "org.healthsector.confirmAppointment",
3    "doctor": "resource:org.healthsector.Physician#DOC1",
4    "appoint": "resource:org.healthsector.Appointment#APP01"
5 }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

Cancel

Submit

Wed 17:38

Hyperledger Composer - Mozilla Firefox

Hype | Netv | Insta | Hype | How | **Hy X** | Hype | Deploy | healthse | Repo | Search | New | Upgrade | GitLab | Files | Import | Export

host:8080/test#

Asset registry for org.healthsector.Appointment

ID	Data
APP01	<pre>{ "\$class": "org.healthsector.Appointment", "appointmentID": "APP01", "RequestedTime": "15 Mar, 2019", "notes": "I am having Glaucoma in my eyes", "InsuranceFlag": "Yes", "InsuranceId": "resource:org.healthsector.Insuranceledger#HSICOMP1PATIENT1", "patient": "resource:org.healthsector.Patient#PATIENT1", "confirmedBy": "resource:org.healthsector.Physician#DOC1", "status": "Confirmed", "diseaseType": "Eye" }</pre> <p>Collapse</p>

Wed 17:38

Hyperledger Composer - Mozilla Firefox

localhost:8080/test#

Define Test admin

Date, Time	Entry Type	Participant	
2019-03-13, 17:38:22	confirmAppointment	admin (NetworkAdmin)	view record
2019-03-13, 17:35:32	AddAsset	admin (NetworkAdmin)	view record
2019-03-13, 17:23:12	approvelnsurance	admin (NetworkAdmin)	view record
2019-03-13, 17:19:47	requestInsurance	admin (NetworkAdmin)	view record
2019-03-13, 17:17:13	AddParticipant	admin (NetworkAdmin)	view record
2019-03-13, 17:14:50	AddParticipant	admin (NetworkAdmin)	view record

Confirm Appointment transaction in Records

Historian Record

Transaction Events (0)

```
1 |[
2   "$class": "org.healthsector.confirmAppointment",
3   "doctor": "resource:org.healthsector.Physician#DOC1",
4   "appoint": "resource:org.healthsector.Appointment#APP01",
5   "transactionId":
6     "a4092b2426a151aee8f3220933e66bd169d8a45f639d63df0dd3d7c4e19ea7bd",
7   "timestamp": "2019-03-14T00:38:22.096Z"
8 ]
```

Wed 17:40

Hyperledger Composer - Mozilla Firefox

| Hype | Netw | Insta | Hype | How | **Hyp X** | Hype | Deploy | healthse | Repo | Search | New | Upgr | GitLab | Files | Impo | ...

calhost:8080/test#

Asset registry for org.healthsector.PreDoctorCheckup

ID	Data
----	------



This registry is empty!

To create resources in this registry click create new at the top of this page

PreDoctor Chekcup with id PRECHECKUP01

Create New Asset

In registry: org.healthsector.PreDoctorCheckup

JSON Data Preview

```
1  [
2    "$class": "org.healthsector.PreDoctorCheckup",
3    "checkupId": "PRECHECKUP01",
4    "appointment": "resource:org.healthsector.Appointment#APP01",
5    "BodyTemperature": 98,
6    "BloodPressure": "123/80",
7    "pulse": "90",
8    "Height": 172,
9    "Weight": 70,
10   "Notes": "Normal"
11 }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

Cancel

Create New

Wed 17:41

Hyperledger Composer - Mozilla Firefox

| Hype | Netv | Insta | Hype | How | **Hyp X** | Hype | Deploy | health | Repo | Search | New | Upgrade | GitLab

alhost:8080/test#

Define Test

Asset registry for org.healthsector.PreDoctorCheckup

ID	Data
PRECHECKUP01	<pre>{ "\$class": "org.healthsector.PreDoctorCheckup", "checkupId": "PRECHECKUP01", "appointment": "resource:org.healthsector.Appointment#APP01", "BodyTemperature": 98, "BloodPressure": "123/80", "pulse": "90", "Height": 172, "Weight": 70, "Notes": "Normal" }</pre> <p style="text-align: right;"><input type="button" value="Collapse"/></p>

Create Recipe with id RX01

Submit Transaction X

Transaction Type createRecipe ▼

JSON Data Preview

```
1  {
2    "$class": "org.healthsector.createRecipe",
3    "contractId": "RX01",
4    "patient": "resource:org.healthsector.Patient#PATIENT1",
5    "physician": "resource:org.healthsector.Physician#DOC1",
6    "appointment": "resource:org.healthsector.Appointment#APP01",
7    "PatientCheckupList":
8      "resource:org.healthsector.PreDoctorCheckup#PRECHECKUP01",
9      "prescriptionDate": "15 Mar, 2019",
10     "tablets": 3,
11     "dosage": 2,
12     "type": "IBOPROUFEN",
13     "notes": "Maintain Temperature 1-2",
14     "consultingCharges": 500
15 }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

Cancel Submit

alhost:8080/test#

Define Test admin ▾

Submit Transaction Successful
Transaction ID
f8173cb7b0f6635b43597176849
was submitted

Date, Time	Entry Type	Participant	
2019-03-13, 17:51:18	createRecipe	admin (NetworkAdmin)	view record
2019-03-13, 17:41:47	AddAsset	admin (NetworkAdmin)	view record
2019-03-13, 17:38:22	confirmAppointment	admin (NetworkAdmin)	view record
2019-03-13, 17:35:32	AddAsset	admin (NetworkAdmin)	view record
2019-03-13, 17:23:12	approvelInsurance	admin (NetworkAdmin)	view record
2019-03-13, 17:19:47	requestInsurance	admin (NetworkAdmin)	view record

Recipe in Records

Historian Record

Transaction Events (0)

```
3   "contractId": "RX01",
4   "patient": "resource:org.healthsector.Patient#PATIENT1",
5   "physician": "resource:org.healthsector.Physician#DOC1",
6   "appointment": "resource:org.healthsector.Appointment#APP01",
7   "PatientCheckupList":
8     "resource:org.healthsector.PreDoctorCheckup#PRECHECKUP01",
9     "prescriptionDate": "15 Mar, 2019",
10    "tablets": 3,
11    "dosage": 2,
12    "type": "IBOPROUFEN",
13    "notes": "Maintain Temperature 1-2",
14    "consultingCharges": 500,
15    "transactionId":
16      "f8173cb7b0f6635b43597176849167581c7aa5d2cb9cc1daa2e52da629f664fa",
17    "timestamp": "2019-03-14T00:51:18.888Z"
18  }
```

Asset registry for org.healthsector.Recipe

ID	Data
RX01	<pre>{ "\$class": "org.healthsector.Recipe", "contractId": "RX01", "patient": "resource:org.healthsector.Patient#PATIENT1", "physician": "resource:org.healthsector.Physician#DOC1", "appointment": "resource:org.healthsector.Appointment#APP01", "PatientCheckupList": "resource:org.healthsector.PreDoctorCheckup#PRECHECKUP01", "prescriptionDate": "15 Mar, 2019", "tablets": 3, "dosage": 2, "type": "IBOPROUFEN", "notes": "Maintain Temperature 1-2", "consultingCharges": 500 }</pre> <div style="text-align: right;">Collapse</div>

Participant registry for org.healthsector.HealthInsuranceCompany

ID	Data
HSICOMP1	<pre>{ "\$class": "org.healthsector.HealthInsuranceCompany", "HSI": "HSICOMP1", "CompanyName": "Insurance compl", "License": "5656", "email": "comp@gmail.com", "phone": "8989898989", "ratings": 4, "address": { "\$class": "org.healthsector.Address", "city": "Delhi", "country": "India", "street": "Chandni Chowk", "zip": "568945" }, "AccountBalance": 501000.89, "DueBalance": 500 }</pre> <div style="text-align: right; margin-top: -20px;">Collapse</div>

Asset registry for org.healthsector.InsuranceBilltoDoct

ID	Data
RX01	<pre>{ "\$class": "org.healthsector.InsuranceBilltoDoct", "BillID": "RX01", "payer": "resource:org.healthsector.HealthInsuranceCompany#HSICOMP1", "reffInsuranceLedger": "resource:org.healthsector.Insuranceledger#HSICOMP1PATIENT1", "rx": "resource:org.healthsector.Recipe#RX01", "reciever": "resource:org.healthsector.Physician#DOC1", "status": "Pending" }</pre> <div style="text-align: right;">Collapse</div>

InsuranceBilltoDoct

Payment of Consultation charges

Submit Transaction

Transaction Type **PayConsultationBillFHI**

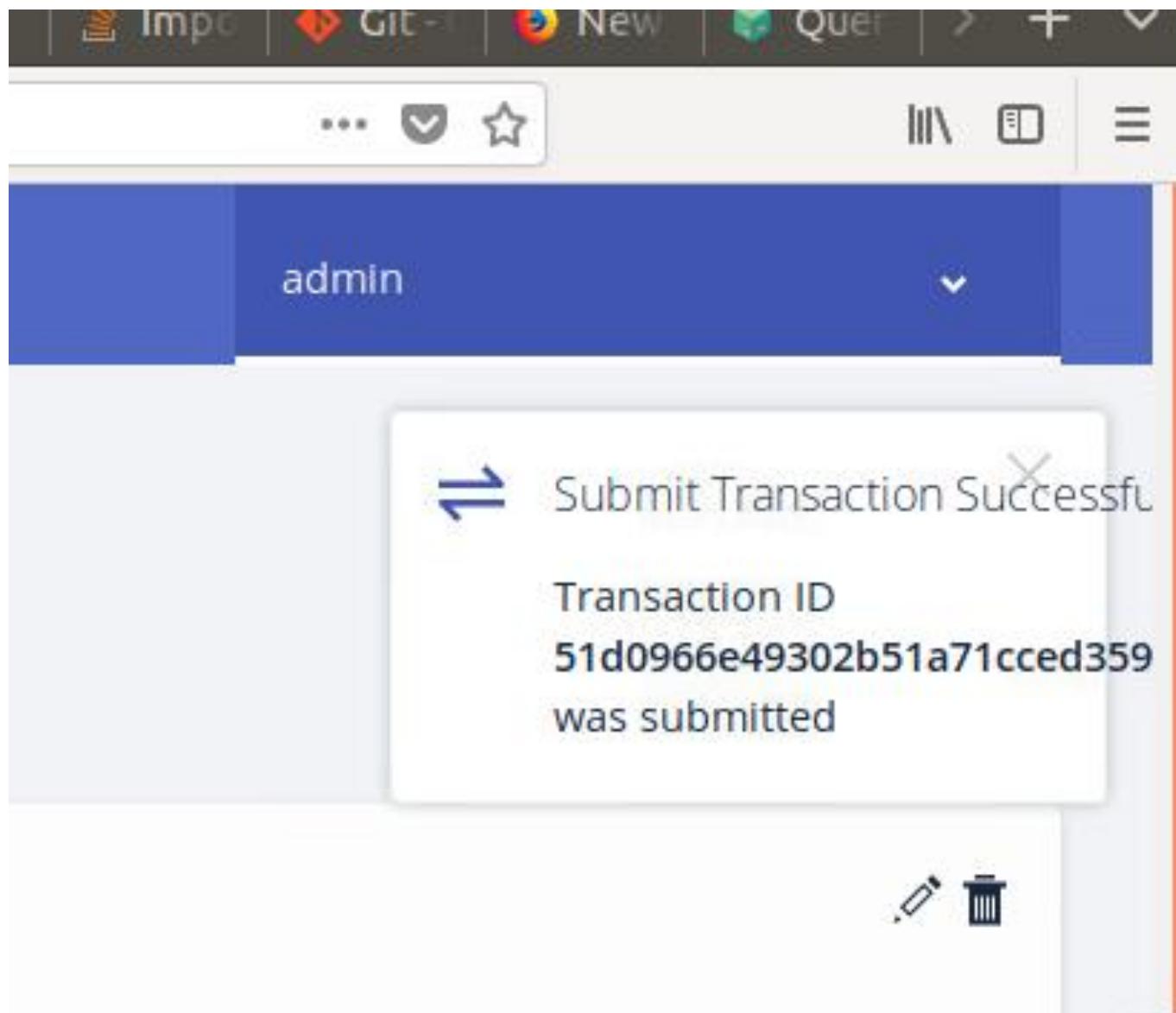
JSON Data Preview

```
1  {
2    "$class": "org.healthsector.PayConsultationBillFHI",
3    "bill": "resource:org.healthsector.InsuranceBilltoDoct#RX01",
4    "payer": "resource:org.healthsector.HealthInsuranceCompany#HSICOMP1"
5 }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

[Cancel](#) [Submit](#)



Wed 17:54

Hyperledger Composer - Mozilla Firefox

|  Hype |  Netw |  Insta |  Hype |  How |  Hy X |  Hype |  Depl |  healt |  Repo |  Sear |  New |  Upgr | 

alhost:8080/test#

asset registry for org.healthsector.insuranceBilltoDoc

ID	Data
RX01	<pre>{ "\$class": "org.healthsector.InsuranceBilltoDoct", "BillID": "RX01", "payer": "resource:org.healthsector.HealthInsuranceCompany#HSICOMP1", "reffInsuranceLedger": "resource:org.healthsector.Insuranceledger#HSICOMP1PATIENT1", "rx": "resource:org.healthsector.Recipe#RX01", "reciever": "resource:org.healthsector.Physician#DOC1", "status": "Paid" }</pre> <p>Collapse</p>

Due Balance is 0

Wed 17:57

Hyperledger Composer - Mozilla Firefox

alhost:8080/test

Define Test

Participant registry for org.healthsector.HealthInsuranceCompany

ID	Data
HSICOMP1	<pre>{ "\$class": "org.healthsector.HealthInsuranceCompany", "HSI": "HSICOMP1", "CompanyName": "Insurance compl", "License": "5656", "email": "comp@gmail.com", "phone": "8989898989", "ratings": 4, "address": { "\$class": "org.healthsector.Address", "city": "Delhi", "country": "India", "street": "Chandni Chowk", "zip": "568945" }, "AccountBalance": 501500.89, "DueBalance": 0 }</pre> <p>Collapse</p>

Wed 17:58

Hyperledger Composer - Mozilla Firefox

calhost:8080/test

Define Test adm

Asset registry for org.healthsector.Order

ID	Data
	 This registry is empty! To create resources in this registry click create new at the top of this page

Invoke Shipment Order transaction

Submit Transaction X

Transaction Type **ShipmentOrder** ▾

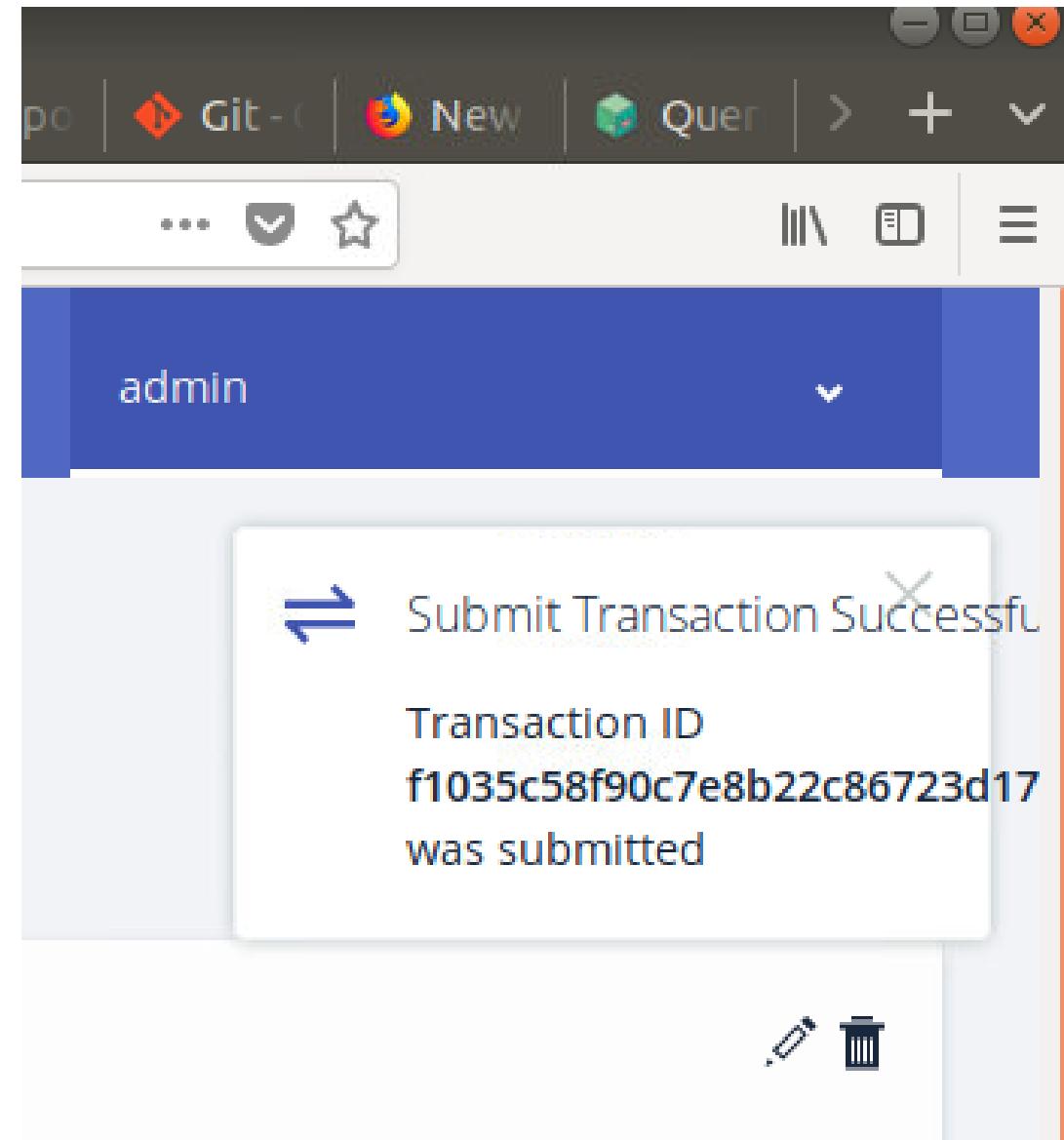
JSON Data Preview

```
1  {
2    "$class": "org.healthsector.ShipmentOrder",
3    "orderId": "ORDER01",
4    "unitCount": "1",
5    "creator": "resource:org.healthsector.Patient#PATIENT1",
6    "recipe": "resource:org.healthsector.Recipe#RX01",
7    "Supplier": "resource:org.healthsector.Vendor#VENDOR1"
8  }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

Cancel Submit



Wed 18:00

Hyperledger Composer - Mozilla Firefox

|  Hype |  Netw |  Insta |  Hypericon |  How |  Hy X |  Hypericon |  Deploy | health |  Repo |  Search |  New

localhost:8080/test

Define Test

Asset registry for org.healthsector.Order

ID	Data
ORDER01	<pre>{ "\$class": "org.healthsector.Order", "orderId": "ORDER01", "unitCount": "1", "status": "Placed", "creator": "resource:org.healthsector.Patient#PATIENT1", "recipe": "resource:org.healthsector.Recipe#RX01", "Supplier": "resource:org.healthsector.Vendor#VENDOR1" }</pre> <p style="text-align: right;">Collapse</p>

Invoke of Shipment shipped transaction by Vendor

Submit Transaction

Transaction Type **ShipmentShipped**

JSON Data Preview

```
1  {
2    "$class": "org.healthsector.ShipmentShipped",
3    "Shipper": "resource:org.healthsector.Vendor#VENDOR1",
4    "amount": 1200,
5    "order": "resource:org.healthsector.Order#ORDER01"
6 }
```

Optional Properties

Just need quick test data? [Generate Random Data](#)

[Cancel](#) [Submit](#)

Asset registry for org.healthsector.Order

ID	Data
ORDER01	<pre>{ "\$class": "org.healthsector.Order", "orderId": "ORDER01", "unitCount": "1", "status": "In_Transit", "price": 1200, "creator": "resource:org.healthsector.Patient#PATIENT1", "recipe": "resource:org.healthsector.Recipe#RX01", "Supplier": "resource:org.healthsector.Vendor#VENDOR1" }</pre> <div style="text-align: right;">Collapse</div>

Participant registry for org.healthsector.Patient

ID

Data

PATIENT1

```
{  
    "$class": "org.healthsector.Patient",  
    "PMI": "PATIENT1",  
    "FirstName": "Shyam",  
    "LastName": "Lal",  
    "email": "shyam@gmail.com",  
    "phone": "4545454545",  
    "gender": "Male",  
    "Age": 45,  
    "accountBalance": 42799.11,  
    "address": {  
        "$class": "org.healthsector.Address",  
        "city": "Kanpur",  
        "country": "India",  
        "street": "Gomti Nagar",  
        "zip": "208016"  
    }  
}
```

Collapse

After Invoke of Shipment Received

Asset registry for org.healthsector.Order

ID	Data
ORDER01	<pre>{ "\$class": "org.healthsector.Order", "orderId": "ORDER01", "unitCount": "1", "status": "Delivered", "price": 1200, "creator": "resource:org.healthsector.Patient#PATIENT1", "recipe": "resource:org.healthsector.Recipe#RX01", "Supplier": "resource:org.healthsector.Vendor#VENDOR1" }</pre> <div style="text-align: right;">Collapse</div>

COMPOSER REST SERVER (composer-rest-server)

Firefox Web Browser ▾ Wed 18:05

Hyperledger Composer REST server - Mozilla Firefox

localhost:3000/explorer/

Hyperledger Composer REST server

org_healthsector_Appointment : An asset named Appointment	Show/Hide List Operations Expand Operations
org_healthsector_approveInsurance : A transaction named approveInsurance	Show/Hide List Operations Expand Operations
org_healthsector_Clerk : A participant named Clerk	Show/Hide List Operations Expand Operations
org_healthsector_confirmAppointment : A transaction named confirmAppointment	Show/Hide List Operations Expand Operations
org_healthsector_createRecipe : A transaction named createRecipe	Show/Hide List Operations Expand Operations
org_healthsector_HealthInsuranceCompany : A participant named HealthInsuranceCompany	Show/Hide List Operations Expand Operations
org_healthsector_InsuranceBilltoDoct : An asset named InsuranceBilltoDoct	Show/Hide List Operations Expand Operations
org_healthsector_Insuranceledger : An asset named Insuranceledger	Show/Hide List Operations Expand Operations
org_healthsector_Nurse : A participant named Nurse	Show/Hide List Operations Expand Operations
org_healthsector_Order : An asset named Order	Show/Hide List Operations Expand Operations
org_healthsector_Patient : A participant named Patient	Show/Hide List Operations Expand Operations

org_healthsector_Order : An asset named Order

Show/Hide | List Operations | Expand Operations

GET	/org.healthsector.Order	Find all instances of the model matched by filter from the data source.
POST	/org.healthsector.Order	Create a new instance of the model and persist it into the data source.
GET	/org.healthsector.Order/{id}	Find a model instance by {{id}} from the data source.
HEAD	/org.healthsector.Order/{id}	Check whether a model instance exists in the data source.
PUT	/org.healthsector.Order/{id}	Replace attributes for a model instance and persist it into the data source.
DELETE	/org.healthsector.Order/{id}	Delete a model instance by {{id}} from the data source.

org_healthsector_Patient : A participant named Patient

Show/Hide | List Operations | Expand Operations

Composer rest server

"GET" API IN COMPOSER REST SERVER FOR FETCHING ALL ORDERS

The screenshot shows the Hyperledger Composer REST server interface at `localhost:3000/explorer#!/org95healthsector95Order/org_healthsector_Order_find`. The request URL is `http://localhost:3000/api/org.healthsector.Order`. The response body displays a JSON array of one order object:

```
[  
  {  
    "$class": "org.healthsector.Order",  
    "orderId": "ORDER01",  
    "unitCount": "1",  
    "status": "Delivered",  
    "price": 1200,  
    "creator": "resource:org.healthsector.Patient#PATIENT1",  
    "recipe": "resource:org.healthsector.Recipe#RX01",  
    "Supplier": "resource:org.healthsector.Vendor#VENDOR1"  
  }  
]
```

The response code is 200, and the response headers include:

```
{  
  "access-control-allow-credentials": "true",  
  "connection": "keep-alive",  
  "content-length": "265",  
  "content-type": "application/json; charset=utf-8",  
  "date": "Thu, 14 Mar 2019 01:05:28 GMT",  
  "etag": "W/\"109-S2ZbDpYLB0hZECIMJmqmM8nPEM4\"",  
  "vary": "Origin, Accept-Encoding",  
  "x-content-type-options": "nosniff",  
  "x-download-options": "noopen",  
  "x-frame-options": "DENY",  
  "x-xss-protection": "1; mode=block"  
}
```

THANK YOU