BLOCKCHAIN ON CLOUD

WORKSHOP GUIDE

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SECTION 1 - BUILDING A DEVELOPMENT ENVIRONMENT

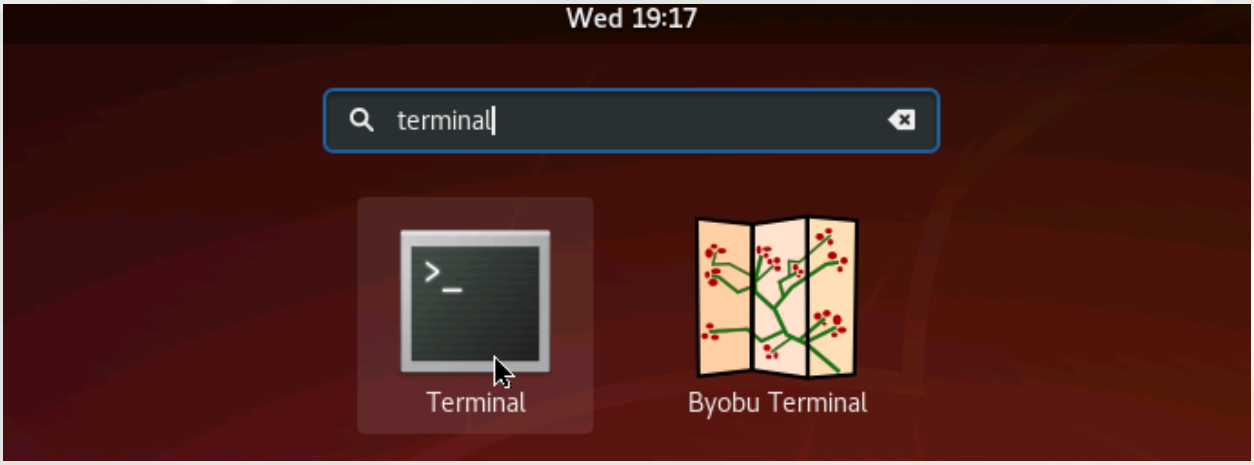
1.1 INSTALL PREREQUISITES FOR HYPERLEDGER FABRIC AND COMPOSER

In this section, you will be installing required prerequisite for Hyperledger Fabric v1.2 and Hyperledger composer/playground.

1.1.1 Click on the "Activities" located at the top left hand corner.

Pic 1.1.1 – Activities menu

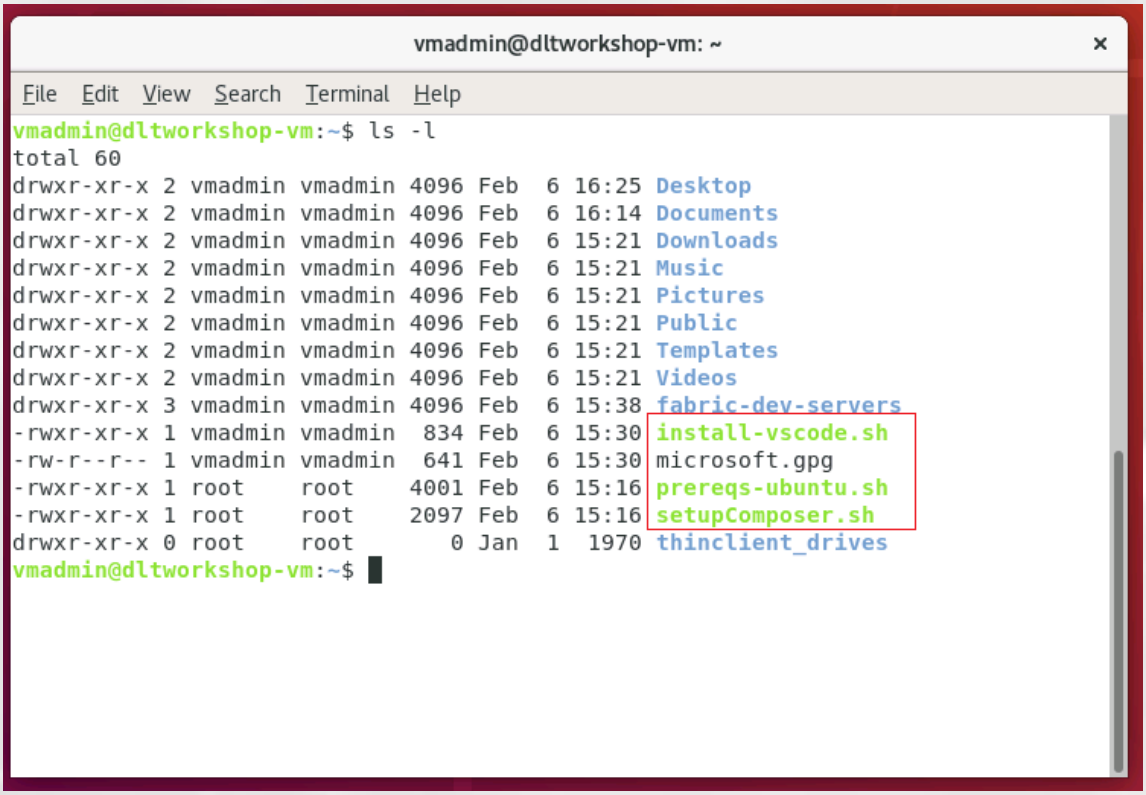
1.1.2 Type-in "terminal" and you will see two applications as shown below. Please click on "Terminal"



Pic 1.1.2 – Opening Terminal

1.1.3 When you open the terminal app, please type the following command and that should
display list of folders and files located at the home folder.

```
ls -l
```



Pic 1.1.3 – Terminal window that list all the prerequisite install scripts

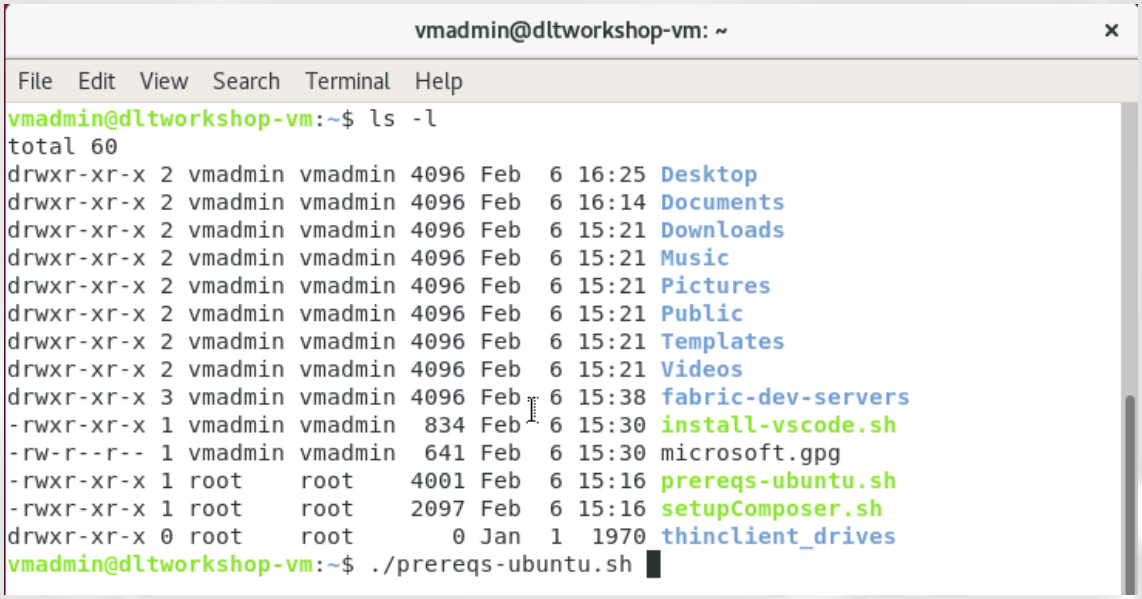
1.1.4 We will be using "prereqs-ubuntu.sh" script to install the following dependencies need for Hyperledger Fabric and Composer tool set.

- Git
- npm
- NodeJS
- Docker-ce
- Docker-Compose
- Python

- Unzip

Please run the following command and execute “prereqs-ubuntu.sh” script.

```
./prereqs-ubuntu.sh
```



Pic 1.1.4 – Terminal window with command to run ./prereqs-ubuntu.sh script

Please let the script: prereqs-ubuntu.sh run and wait for the following message: “Please logout then login before continuing“

When you see this message you can execute the following command or manually reboot your VM.

```
sudo reboot now
```

1.2 INSTALL VISUAL STUDIO CODE

Here we will using a script to install Visual studio Code editor. You can find more information about this edit at https://code.visualstudio.com/

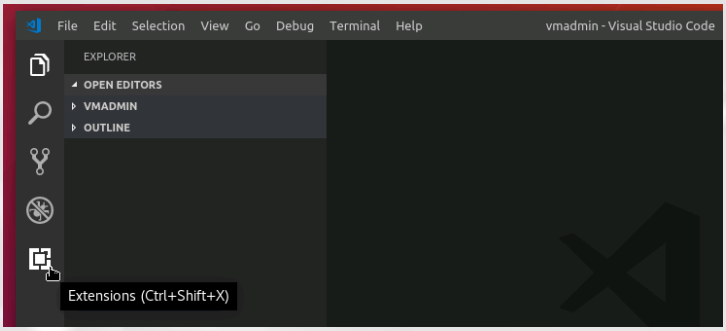
Please run the following command and execute "install-vscode.sh" script.

```
./install-vscode.sh
```

Once the installation complete, please launch the code editor. You can just type "code" from the terminal window to open the app.

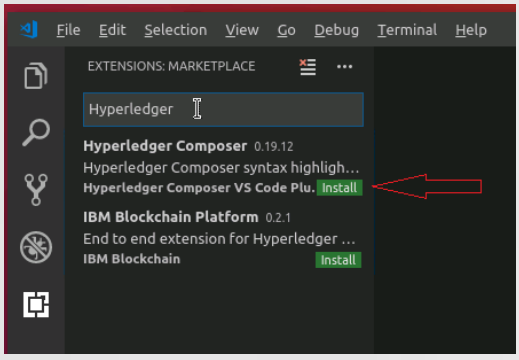
```
code
```

Once the app running, please click on Extensions button at the top left hand corner.



Picture 1.2.1 – Code editor

Please type "Hyperledger" on market place search box. You should see Hyperledger composer as one of the result. click on "install" to install the composer extension.



1.3 INSTALL HYPERLEDGER COMPOSER TOOL SET

Now that we have all the prerequisite installed, let's install Composer tool sets and Fabric.

Please run setupComposer.sh script found under the home directory.

```
./setupComposer.sh
```

This script install the following components:

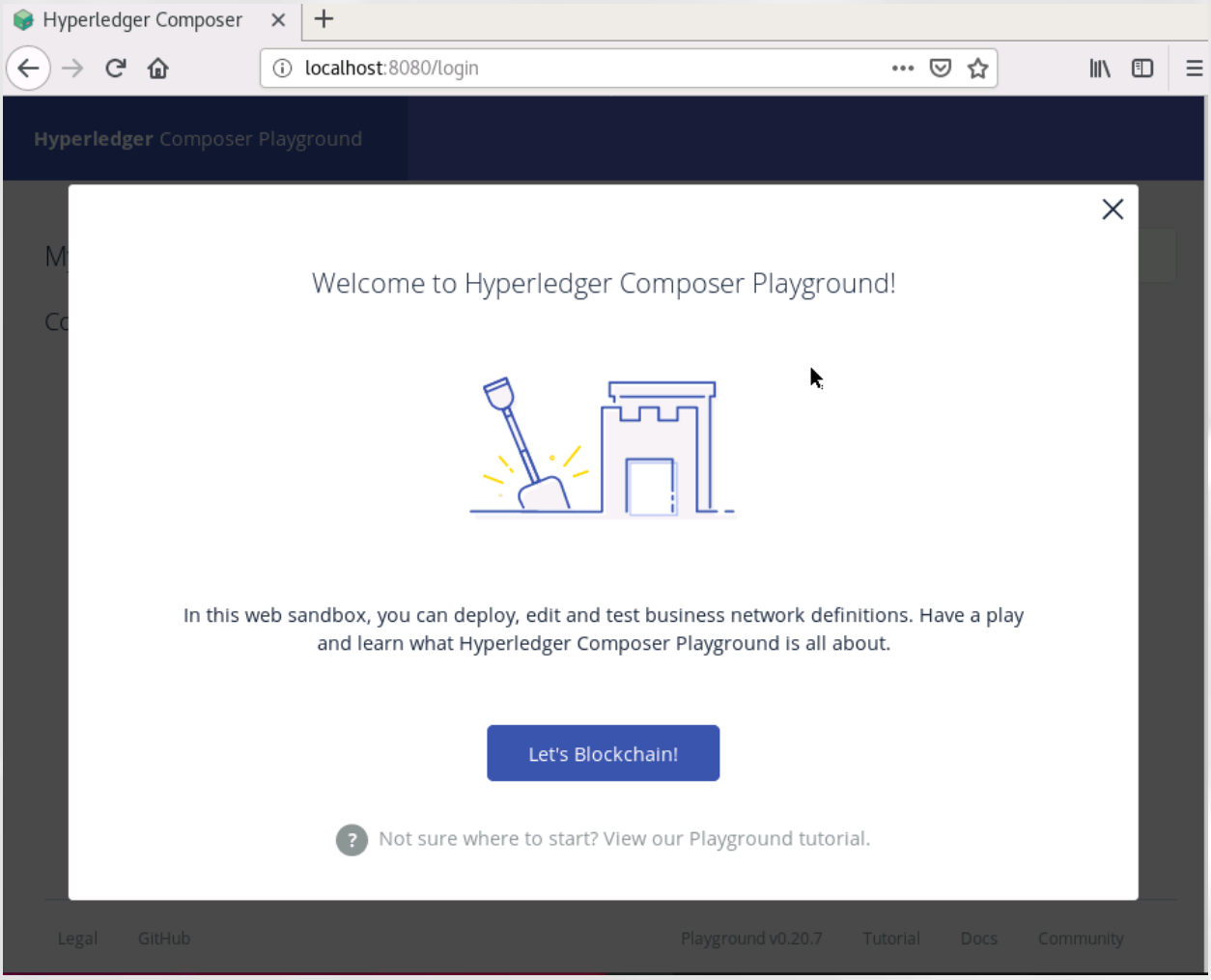
- Composer-cli – command line interface to Composer
- Composer-rest-server - Utility for running a REST Server on your machine to expose your business networks as RESTful APIs.
- Generator-hyperledger-composer - Useful utility for generating application assets.
- Yo - Yeoman is a tool for generating applications, which utilises generator-hyperledger-composer
- Composer-playground – web application that enables testing of Blockchain models.
- Deploy Fabric framework and starts a sample single organization based network.
- Creates a Peer admin card
- Finally, runs composer-playground web application.

SECTION 2 – HANDS ON WITH HYPERLEDGER

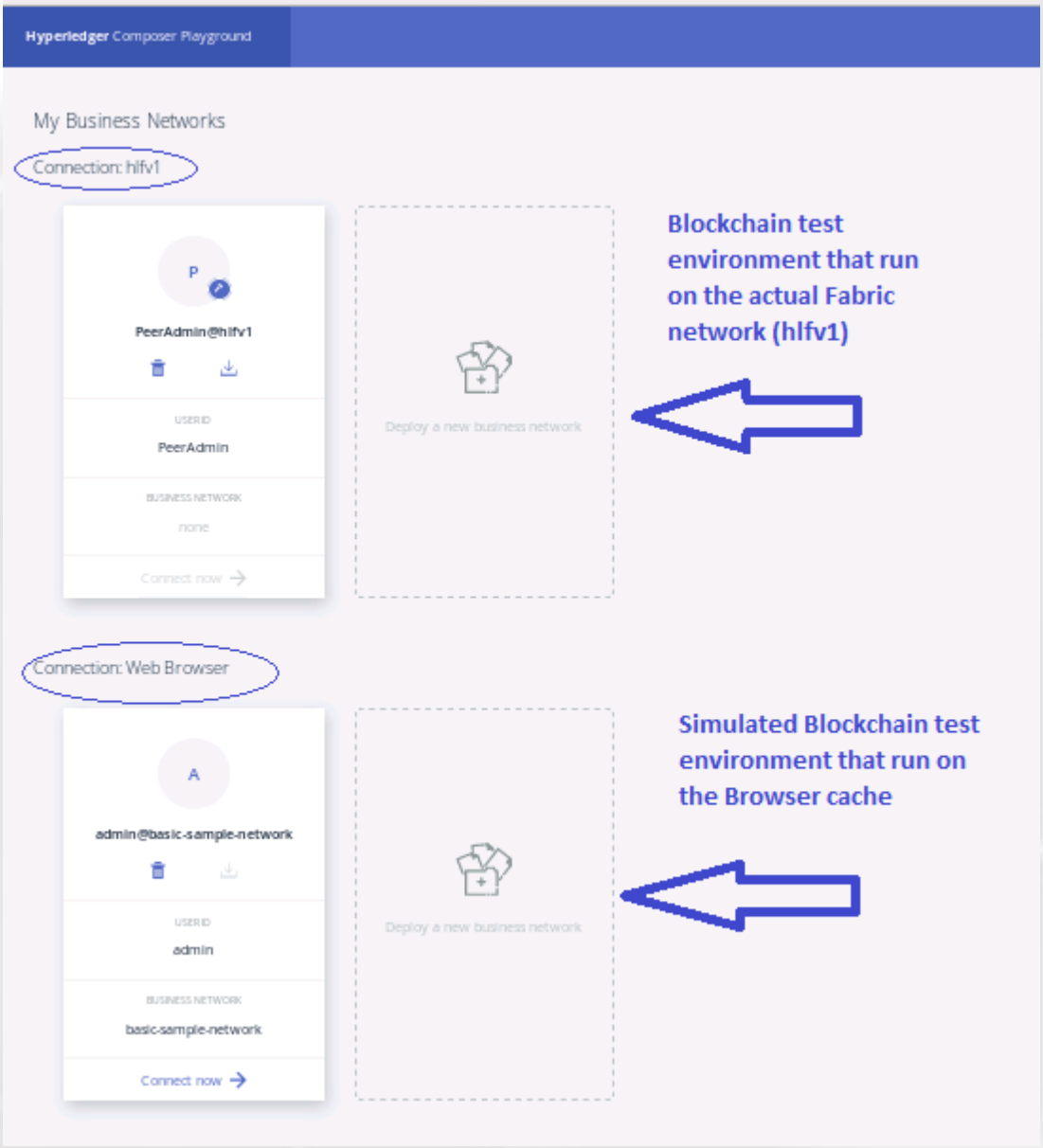
In this section we will be exploring components of Hyperledger Composer using a simple Blockchain business model.

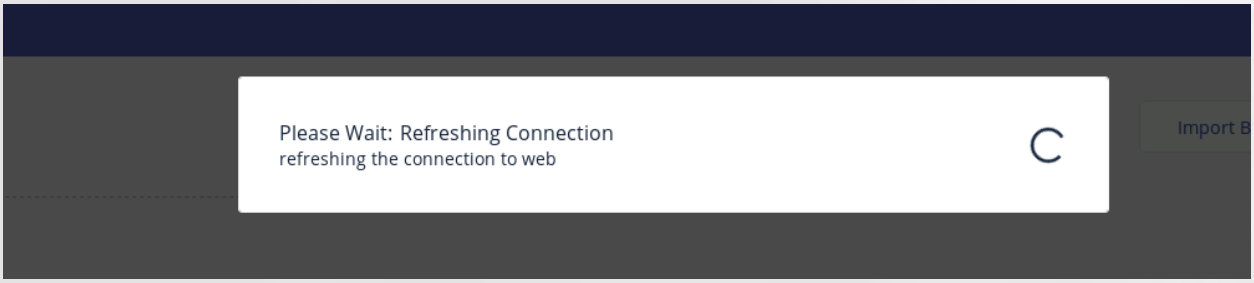
2.1 HYPERLEDGER COMPOSER PLAYGROUND

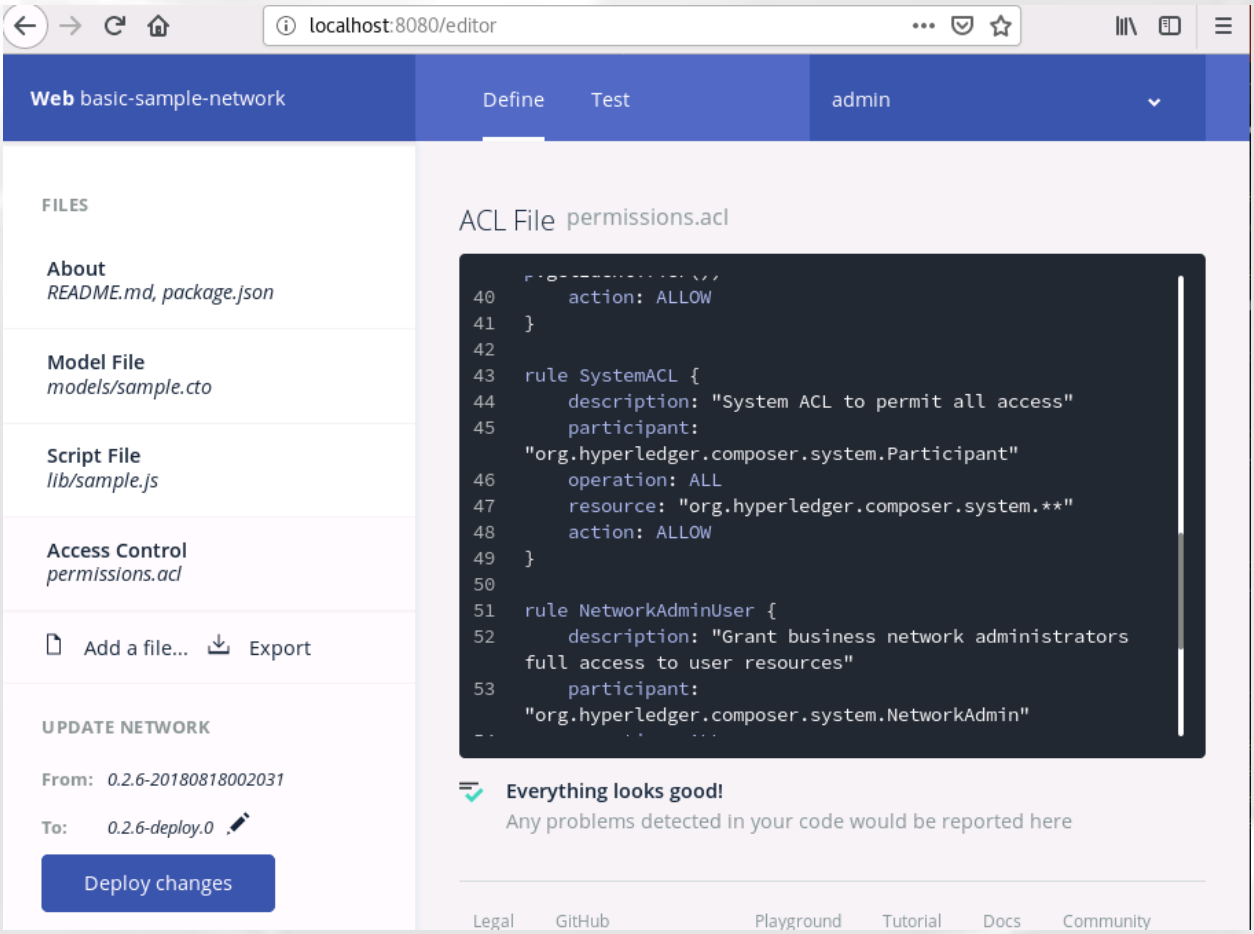
After the step 1.3, a web based Playground IDE will be launched as shown below. Please click on "Let's Blockchain!" button to view the main page.



Playground IDE


Hyperledger Composer Playground
My Business Networks
Connection: hlfv1
PeerAdmin@hlfv1
USERID
PeerAdmin
BUSINESS NETWORK
none
Connect now
Deploy a new business network
Blockchain test environment that run on the actual Fabric network (hlfv1)
Connection: Web Browser
admin@basic-sample-network
USERID
admin
BUSINESS NETWORK
basic-sample-network
Connect now
Deploy a new business network
Simulated Blockchain test environment that run on the Browser cache


Please Wait: Refreshing Connection
refreshing the connection to web
Import B


localhost:8080/editor
Web basic-sample-network
Define
Test
admin
FILES
About
README.md, package.json
Model File
models/sample.cto
Script File
lib/sample.js
Access Control
permissions.acl
Add a file...
Export
UPDATE NETWORK
From: 0.2.6-20180818002031
To: 0.2.6-deploy.0
Deploy changes
ACL File permissions.acl
40 action: ALLOW
41 }
42
43 rule SystemACL {
44 description: "System ACL to permit all access"
45 participant:
"org.hyperledger.composer.system.Participant"
46 operation: ALL
47 resource: "org.hyperledger.composer.system.**"
48 action: ALLOW
49 }
50
51 rule NetworkAdminUser {
52 description: "Grant business network administrators
full access to user resources"
53 participant:
"org.hyperledger.composer.system.NetworkAdmin"
Everything looks good!
Any problems detected in your code would be reported here
Legal
GitHub
Playground
Tutorial
Docs
Community