

Package the Chaincode

Steps to be followed:

1. Setting up the Hyperledger Fabric Test network
2. Packaging the carshowroom chaincode

Step 1: Setting up the Hyperledger Fabric Test network

1.1 Navigate to the **test-network** folder by using the following command:

```
cd eclipse-workspace/fabric-samples/test-network
```

1.2 Stop the previously running test network by running the following command:

```
sudo ./network.sh down
```

***[this ERROR: The Compose file './docker/docker-compose-ca.yaml' is invalid because:
networks.test value Additional properties are not allowed ('name' was unexpected') If
this error came then follow this steps:***

```
sudo curl -L "https://github.com/docker/compose/releases/download/1.29.2/docker-  
compose-$(uname -s)-$(uname -m)" -o/usr/local/bin/docker-compose
```

```
sudo chmod +x /usr/local/bin/docker-compose]
```

```

@ip-172-31-73-193:~$ cd eclipse-workspace/fabric-samples/test-network/
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$ sudo ./network.sh down
Stopping network
Removing cli ... done
Removing peer0.org2.example.com ... done
Removing peer0.org1.example.com ... done
Removing couchdb1 ... done
Removing couchdb0 ... done
Removing orderer.example.com ... done
Removing ca_org2 ... done
Removing ca_orderer ... done
Removing ca_org1 ... done
Removing network net_test
Removing volume net_orderer.example.com
Removing volume net_peer0.org1.example.com
Removing volume net_peer0.org2.example.com
Removing network net_test
WARNING: Network net_test not found.
Removing volume net_peer0.org3.example.com
WARNING: Volume net_peer0.org3.example.com not found.
No containers available for deletion
No images available for deletion
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$

```

1.3 Remove the unused docker images by running the following command:

sudo docker system prune

```

@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$ sudo docker system prune
WARNING! This will remove:
- all stopped containers
- all networks not used by at least one container
- all dangling images
- all dangling build cache

Are you sure you want to continue? [y/N] y
Total reclaimed space: 0B
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$

```

1.4 Start the test network by executing the following command:

sudo ./network.sh up -ca -s couchdb

```

@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$ sudo ./network.sh up -ca -s couchdb
Starting nodes with CLI timeout of '5' tries and CLI delay of '3' seconds and using database 'couchdb' with crypto from 'Certificate Authorities'
LOCAL VERSION=2.2.2
DOCKER_IMAGE_VERSION=2.2.2
CA_LOCAL_VERSION=1.4.9
CA_DOCKER_IMAGE_VERSION=1.4.9
Generating certificates using Fabric CA
Creating network "net_test" with the default driver
Creating ca_org2 ... done
Creating ca_org1 ... done
Creating ca_orderer ... done
Creating Org1 Identities

```

- 1.5 To create a communication channel for the peers in the test network use the following command:

sudo ./network.sh createChannel -c samplechannel

```
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$ sudo ./network.sh createChannel -c samplechannel
Creating channel 'samplechannel'.
If network is not up, starting nodes with CLI timeout of '5' tries and CLI delay of '3' seconds and using database 'leveldb'
Generating channel create transaction 'samplechannel.tx'
+ configtxgen -profile TwoOrgsChannel -outputCreateChannelTx ./channel-artifacts/samplechannel.tx -channelID samplechannel
2021-06-08 00:59:56.201 UTC [common.tools.configtxgen] main -> INFO 001 Loading configuration
2021-06-08 00:59:56.218 UTC [common.tools.configtxgen.localconfig] Load -> INFO 002 Loaded configuration: /home/.../eclipse-workspace/fabric-samples/test-network/configtx/configtx.yaml
2021-06-08 00:59:56.218 UTC [common.tools.configtxgen] doOutputChannelCreateTx -> INFO 003 Generating new channel configtx
2021-06-08 01:00:07.848 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2021-06-08 01:00:07.862 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
Anchor peer set for org 'Org2MSP' on channel 'samplechannel'
Channel 'samplechannel' joined
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$
```

- 1.6 Check the list of the channels for the test network by executing the following commands:

sudo chmod 666 /var/run/docker.sock

docker exec peer0.org1.example.com peer channel list

```
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$ sudo chmod 666 /var/run/docker.sock
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$ docker exec peer0.org1.example.com peer channel list
2021-06-08 01:04:40.774 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
Channels peers has joined:
samplechannel
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$
```

Step 2: Packaging the carshowroom chaincode

- 2.1 Navigate to **fabric-samples/test-network** folder and create **lifecycle_setup.sh** file using the following command:

nano lifecycle_setup_org1.sh

2.2 Add the following code in the `lifecycle_setup_org1.sh` file:

```
#!/bin/sh

export PATH=${PWD}/../bin:${PWD}:$PATH

export FABRIC_CFG_PATH=$PWD/../config/

export CORE_PEER_TLS_ENABLED=true

export CORE_PEER_LOCALMSPID="Org1MSP"

export
CORE_PEER_TLS_ROOTCERT_FILE=${PWD}/organizations/peerOrganizations/org1.example.com/peers/peer0.org1.example.com/tls/ca.crt

export
CORE_PEER_MSPCONFIGPATH=${PWD}/organizations/peerOrganizations/org1.example.com/users/Admin@org1.example.com/msp

export CORE_PEER_ADDRESS=localhost:7051

export
ORDERER_CA=${PWD}/organizations/ordererOrganizations/example.com/orderers/orderer.example.com/msp/tlscacerts/tlsca.example.com-cert.pem
```



The screenshot shows a terminal window with the title bar "GNU nano 2.5.3 File: lifecycle_setup_org1.sh". The terminal content matches the code block above, with some lines wrapped. The cursor is at the end of the last line.

```
GNU nano 2.5.3 File: lifecycle_setup_org1.sh
#!/bin/sh
export PATH=${PWD}/../bin:${PWD}:$PATH
export FABRIC_CFG_PATH=$PWD/../config/
export CORE_PEER_TLS_ENABLED=true
export CORE_PEER_LOCALMSPID="Org1MSP"
export CORE_PEER_TLS_ROOTCERT_FILE=${PWD}/organizations/peerOrganizations/org1.example.co$
export CORE_PEER_MSPCONFIGPATH=${PWD}/organizations/peerOrganizations/org1.example.com/us$
export CORE_PEER_ADDRESS=localhost:7051
export ORDERER_CA=${PWD}/organizations/ordererOrganizations/example.com/orderers/orderer.$
```

Note: Press **Ctrl + X** to save the file.

- 2.3 To set up all required environment variables, go to the **fabric-samples/test-network** and run the **lifecycle_setup_org1.sh** file using the command:

source ./lifecycle_setup_org1.sh

```
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$ source ./lifecycle_setup_org1.sh
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$
```

- 2.4 Run the following command to package the **Carshowroom** chaincode:

***peer lifecycle chaincode package Carshowroom.tar.gz --path
../chaincode/Carshowroom/build/install/Carshowroom --lang java --label
Carshowroom_1***

```
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$ peer lifecycle chaincode package Carshowroom.tar.gz --path ../chaincode/Carshowroom/build/install/Carshowroom --lang java --label Carshowroom_1
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$
```

- 2.5 Run the following command to list the newly created **Carshowroom.tar.gz** package:

ls

```
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$ ls
addOrgs                               lifecycle_setup_org2.sh
Carshowroom.tar.gz                   lifecycle_setup.sh
chaincodeJavaLifecycle.sh           log.txt
chaincodeJavaLifecycle.sh.save      network.sh
channel-artifacts                   organizations
configtx                             README.md
docker                               scripts
lifecycle_setup_Channel_commit.sh   system-genesis-block
lifecycle_setup_org1.sh
@ip-172-31-73-193:~/eclipse-workspace/fabric-samples/test-network$
```