* **Steps for running the Blockchain Network in “Dev Mode”:-**

1. Go inside the ‘chaincode’ folder and Open the Terminal & execute “npm install” in it, this will install all the dependencies inside the ‘node\_modules’ folder.
2. Now go inside the ‘network’ folder and inside the Terminal, execute below commands in sequential order:-
   * “./fabricNetwork.sh down” => Stops and Clean all the previous Docker Containers & Images.
   * “./fabricNetwork.sh up” => Starts all the required Docker Services.
3. After the network has been started, open a new terminal and execute below command to go inside the docker container:
   * “docker exec -it chaincode /bin/bash”

And then execute below command to start the nodejs app on this chaincode container:

* “npm run start-dev”

1. Now in the Terminal opened inside the ‘network’ folder, execute below command to install & instantiate the chaincode on the channel:
   * “./fabricNetwork.sh install”

After the successful installation & instantiation of chaincode on the channel, you can go to the docker container, where you will see the logs as in below screenshot:

1. Now open a new terminal and in there open the peer container using below command:
   * “docker exec -it peer0.manufacturer.pharma-net.com /bin/bash”

Inside this peer container you can invoke the required functions.

To get logs of peer container execute below command in the terminal:

“docker logs -f peer0.manufacturer.pharma-net.com”

* **Steps for running the Blockchain Network in “Production Mode”:-**

1. Go inside the ‘chaincode’ folder and Open the Terminal & execute “npm install” in it, this will install all the dependencies inside the ‘node\_modules’ folder.
2. Now go inside the ‘network’ folder and inside the Terminal, execute below commands in sequential order:-
   * “./fabricNetwork.sh down” => Stops and Clean all the previous Docker Containers & Images.
   * “./fabricNetwork.sh up” => Starts all the required Docker Services.
   * “./fabricNetwork.sh install” => To install & instantiate the chaincode on the channel.
3. Now execute below command and you will see that a new container has been started, which is the chaincode container of “peer0.manufacturer.pharma-net.com” node.
   * “docker ps -a”

Similarly, the chaincode containers cross-ponding to each endorser node will get started whenever we invoke a function on that endorser peer for first time.

1. Now open a new terminal and in there open the peer container using below command:
   * “docker exec -it peer0.manufacturer.pharma-net.com /bin/bash”

Inside this peer container you can invoke the required functions, for example as below:

peer chaincode invoke -o orderer.pharma-net.com:7050 -C pharmachannel -n pharmanet -c '{"Args":["org.pharma-net.pharmanet:registerCompany","MAN001","Sun Pharma","Chennai","Manufacturer"]}'

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peer chaincode invoke -o orderer.pharma-net.com:7050 -C pharmachannel -n pharmanet -c '{"Args":["org.pharma-net.pharmanet:addDrug","Paracetamol","001","01-08-2020","01-08-2021","MAN001"]}'

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peer chaincode invoke -o orderer.pharma-net.com:7050 -C pharmachannel -n pharmanet -c '{"Args":["org.pharma-net.pharmanet:registerCompany","MAN001","Sun Pharma","Chennai","Distributor"]}'

Similarly, you can SSH into other endorser peers and invoke the cross-ponding functions.

You can access the logs of a container as follows:-

“docker logs -f peer0.manufacturer.pharma-net.com”

To access logs of a chaincode, you can execute below command:-

“docker logs -f dev-peer0.manufacturer.pharma-net.com-pharmanet-1.2”

**Always remember to update the version of chaincode in the “fabricNetwork.sh” file, if not then while running the chaincode, older version of chaincode will be invoked.**