1. **Steps for Installing and Instantiating Chaincode on Hyperledger Fabric 2.2**
2. **Setup the Environment:** Ensuring Docker and Docker-Compose are installed, and that Fabric binaries and images are downloaded.
3. **Generate Crypto Material and Configurations:** Use the cryptogen and configtxgen tools to generate the necessary cryptographic materials and configuration files for the network
4. **Create a Channel:**

* Generate the channel creation transaction using configtxgen.
* Create the channel with peer channel create.
* Join peers to the channel using peer channel join.

1. **Chaincode Package:**

* Write the chaincode in JavaScript or any supported language.
* Package the chaincode with peer lifecycle chaincode package, which creates a tarball for the chaincode.

1. **Install Chaincode:**

* Install the packaged chaincode on each peer using peer lifecycle chaincode install.

1. **Approve Chaincode Definition:**

* Approve the chaincode for your organization using peer lifecycle chaincode approveformyorg.
* Use peer lifecycle chaincode queryinstalled to check the installed chaincode on peers.

1. **Commit Chaincode Definition:**

* Once all required organizations approve the chaincode, commit the chaincode using peer lifecycle chaincode commit.

1. **Invoke and Test the Chaincode:**

* Use peer chaincode invoke to test the chaincode by invoking its functions.

**2. Explanation of Cryptogen and Configtxgen Tools**

1. **Cryptogen**:

* Cryptogen is a command-line tool used in Hyperledger Fabric to generate cryptographic material, such as certificates and private keys.
* It’s primarily used to create the necessary identities for network participants such as peers, orderers, and clients.
* The Cryptogen tool reads a crypto-config.yaml file which specifies the organizations, peers, and users, then generates the required certificates and keys for them.

1. **Configtxgen**:

* configtxgen is a configuration tool for Hyperledger Fabric. It generates channel artifacts such as the genesis block and channel creation transactions.
* It reads a configuration file called configtx.yaml which contains definitions for the orderer and application channels.
* Common configtxgen commands include generating the genesis block and the channel creation transaction files.