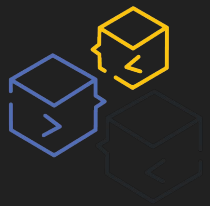



HYPERLEDGER
FABRIC



HYPERLEDGER
COMPOSER

https://github.com/xxLestadxx/FabricPresentation2019Feb

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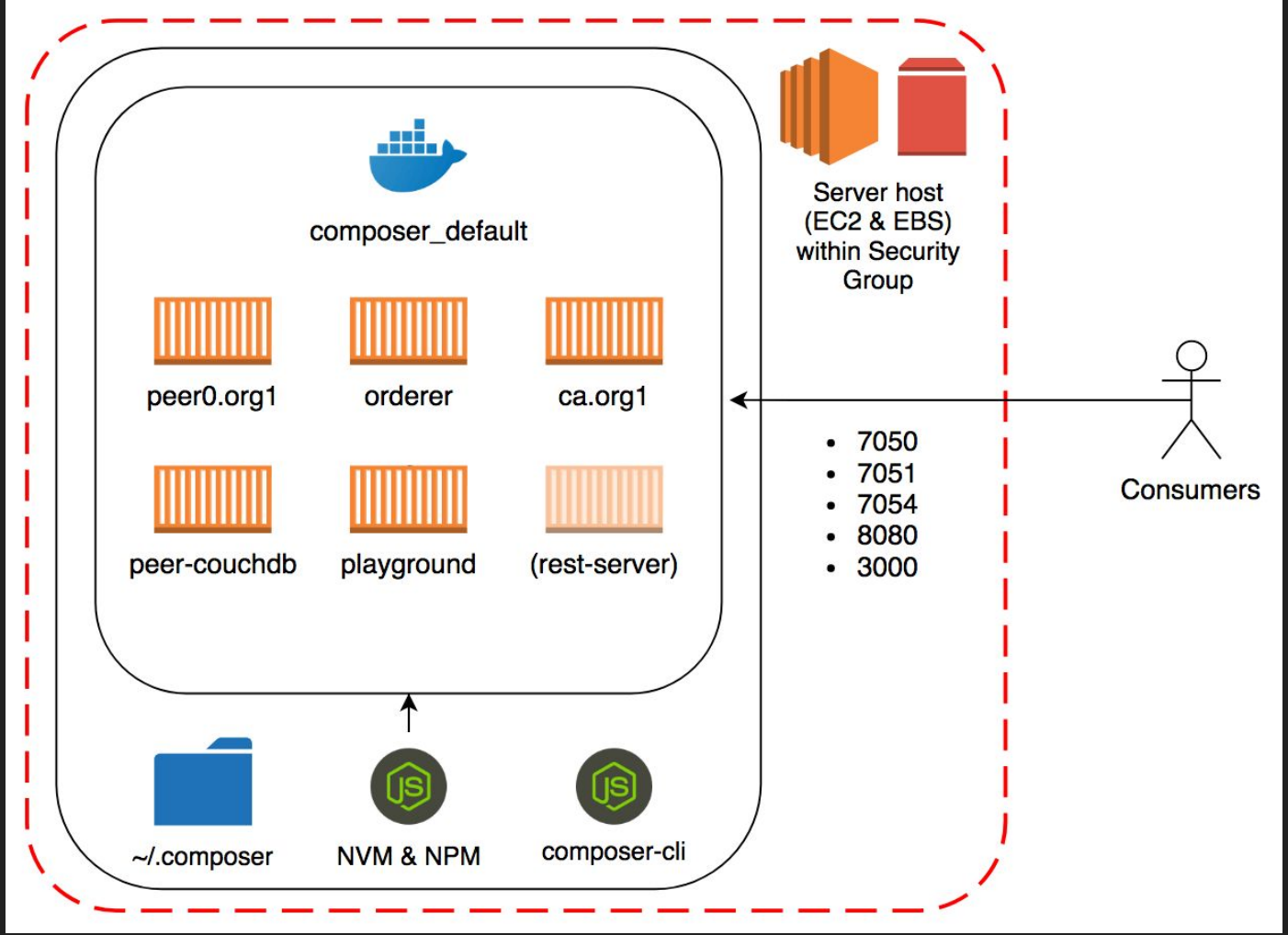
# HYPERLEDGER FABRIC

- Permissioned blockchain - better for businesses
  - Introducing roles to different participants
  - Mostly the consensus is Byzantine fault-tolerant using the PBFT protocol [1] that among the n validating peers at most f < n/3 may “lie” and behave arbitrarily, but all others execute the chaincode correctly.
- Pluggable, modular structure with main components :
  - Certificate authority - deciding the roles of the participants
  - Consensus and ordering system
  - Chaincode (smart contracts)

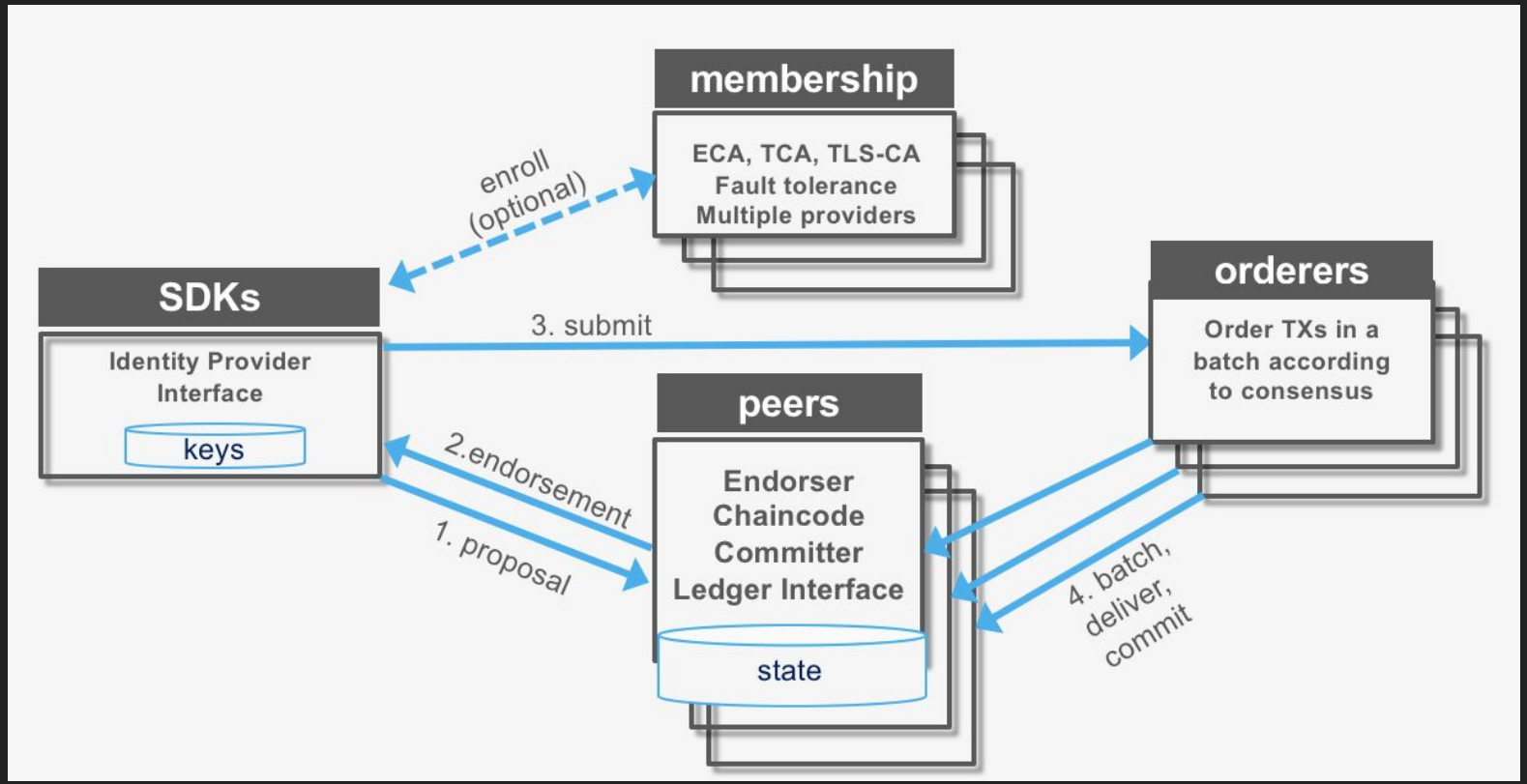
# HYPERLEDGER FABRIC

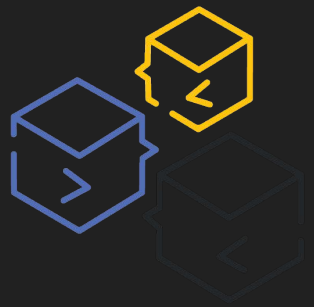
- Confidential transactions
  - In a network of different companies, confidential business transaction enable competitiveness
- No cryptocurrency
  - Faster transactions at no cost
  - More transactions per given time
- Programmable
  - Have smart contracts called chaincode, to program the business logic




https://blog.codecentric.de/en/2018/08/fabric-test-network-ansible-aws/

# Fabric transaction flow



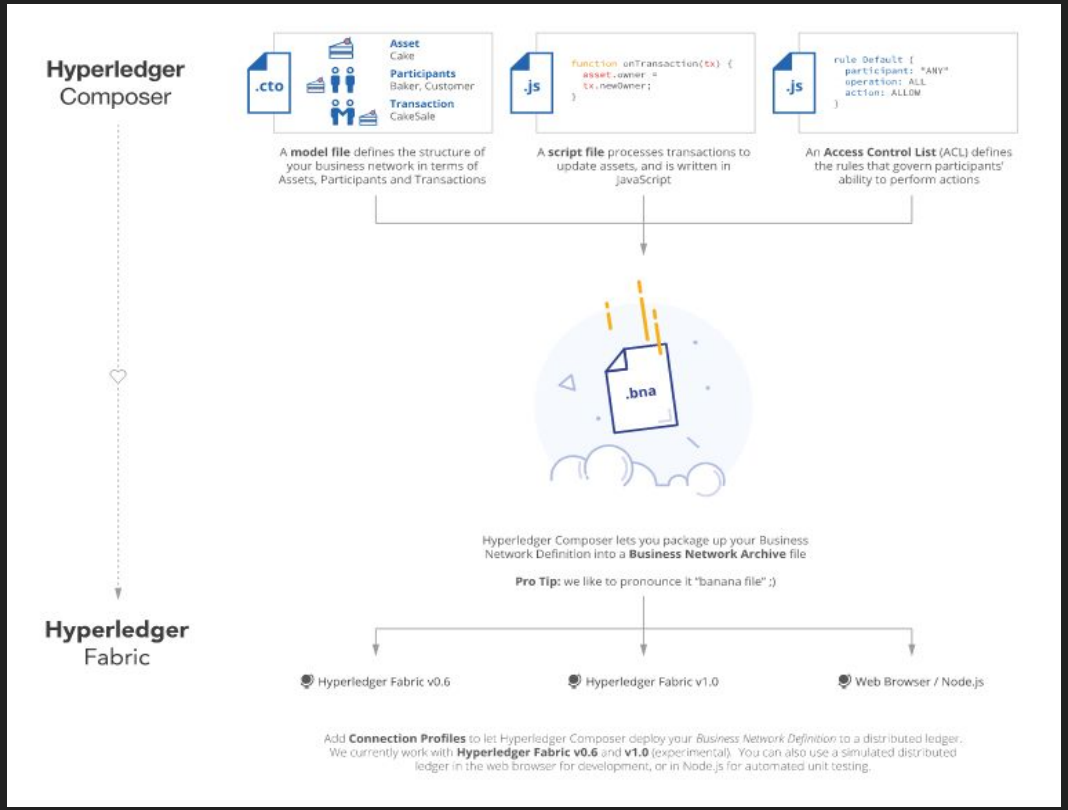


HYPERLEDGER

# COMPOSER

- It was aiming for creating blockchain agnostic business networks (with primary implementing on Fabric)
- Easy to use
- Provides REST (Representational State Transfer) API
- Creating business network out of 3 main files :
  - Model file
  - Logic file (JS)
  - Permissions file
  - It has Query files as well if needed

# Composer to Fabric flow



# VS Code

- IDE( Integrated Development Environment ) / Text editor
- Has plugins for Hyperledger Composer and Docker
- Makes your life easier while developing a business network and then examining and inspecting different Fabric components.

# Hyperledger online Composer playground

- https://composer-playground.mybluemix.net/editor
- Easy to use and to test out your business concept and model
- THE BUSINESS NETWORK MAY BEHAVE DIFFERENTLY WHEN IMPLEMENTED ON FABRIC

# Some working systems built with Fabric

- TradeLens - company founded by collaborative work of Maersk and IBM. The idea is to make the shipping process cost-efficient, faster and simpler. It is a system in the supply chain field.
  - https://www.tradelens.com/
- Verify.Me - mobile app, in and for Canada, to verify your identity in different institutions and services. By using Fabric, the user is only sending pointers to the information, without the respective institutions or services to have the user's data.
  - https://verified.me
- Walmart is working with IBM for supply chain for their products
  - https://techcrunch.com/2018/09/24/walmart-is-betting-on-the-blockchain-to-improve-food-safety/

# Resources

- Hyperledger Composer documentation
  - https://hyperledger.github.io/composer/v0.19/introduction/introduction.html
- Hyperledger Fabric documentation
  - https://hyperledger-fabric.readthedocs.io/en/latest/
- Blockchain development with HPL Fabric and composer course on udemy
  - https://www.udemy.com/hyperledger/
- The rocket chat from Hyperledger organisation, responsive at any time
  - https://chat.hyperledger.org/
- Enterprise blockchain development: with Hyperledger Fabric and Composer by Ernesto Lee, it will be available in the (Uni of Stirling) library after 17.04.2019

# References

[1] Architecture of the Hyperledger Blockchain Fabric, Christian Cachin, IBM Research - Zurich, 2016