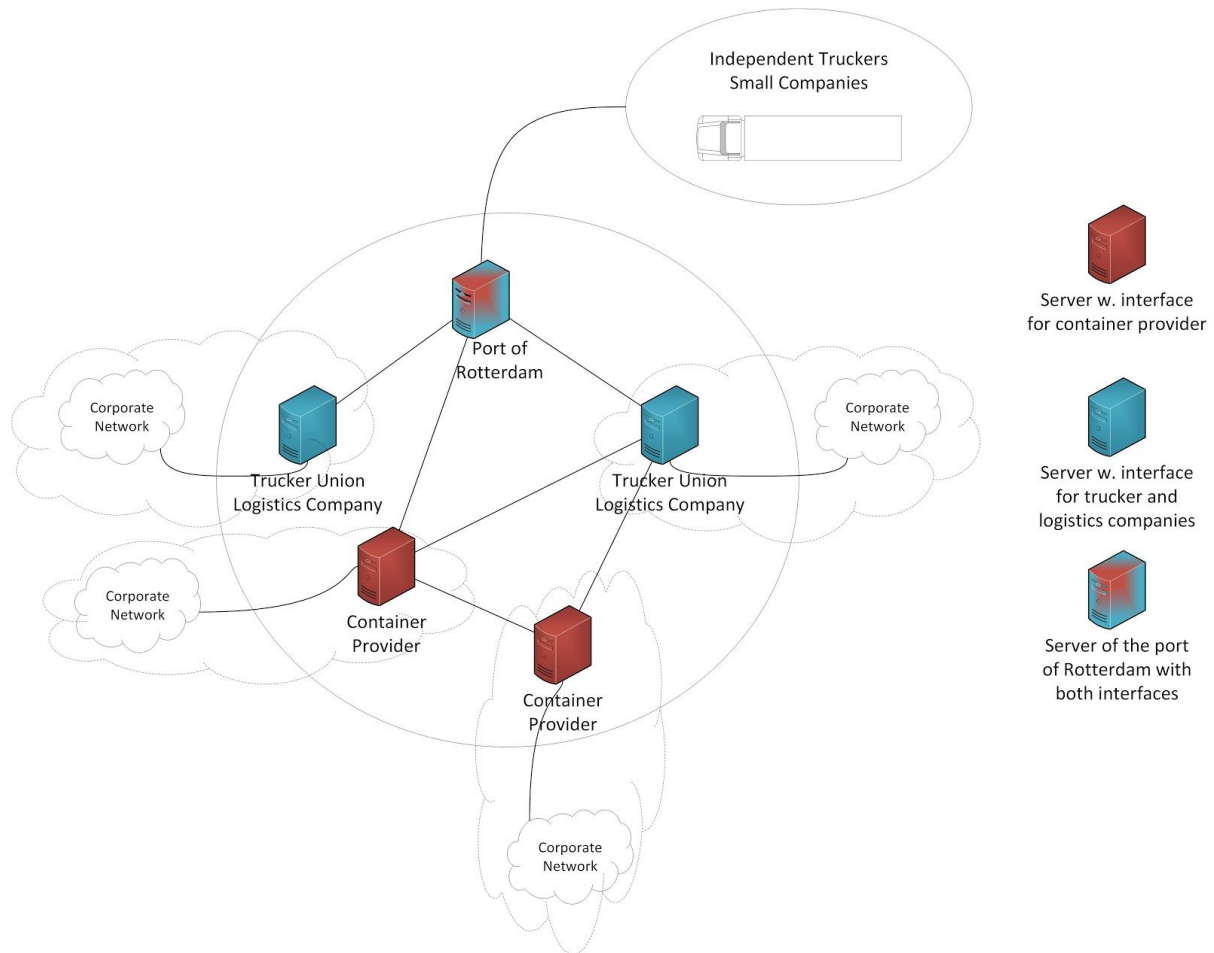




We participated in the blockchangers conference. During the conference we had many of our questions answered by the developers. We started considering new platforms for the project like Exonus. In particular we found out that hyperledger was not built to achieve the decentralized market we were hoping to create. However, we decided to change the solution architecture and keep using hyperledger.

Design of the system



Above is the general system design. We differentiate between two (three) types of servers. The first type is used for trucker unions and logistics companies. This type provides the necessary interface to e.g. bid on contracts. Each company and union run with the server their own node (possibly in the corporate network).

The second type is for container providers (aka Container Guy) and has an interface to manually or automatically insert new containers. The third type is a mixture of the above two (can be separated into two entities in order to omit difficulties). This mixture is only run by the Port of Rotterdam. The Port of Rotterdam, having some trust by default, runs a node for freelancer truckers and small companies without node.

Private channels (creating a completely new side chain) can be used to bid on a container or to handle things once a bid was accepted. From a cryptographic point of view we need to make sure that only authorized persons can access the correct channel. This becomes especially an issue for the server of the Port of Rotterdam, since different companies and persons are summarized in that node. Other nodes can be integrated into the company network and therefore do not suffer from this issue directly and or manage authentication on their own.

Composer POC

We implemented a prototype in Hyperledger Fabric using Composer. The prototype consists of two participants with following transactions:

- ContainerGuy
 - Create container instance
 - Create container delivery contract on his container instance
 - Accept bid on a his container delivery
 - Cancel his container delivery
- Trucker
 - Bid on the container delivery instances that are not canceled or already claimed
 - Cancel his container delivery

It allows us to easily create skeleton of the solution and then use generic hyperledger to support multiple channel support. y

I like trucks. I prefer trains. Let's ship some containers.

We have been working on setting up the environment for Go chaincode development. It was not a straightforward process. We still have some issues with running it locally for testing.