1 Design Documentation

1.1 Overview

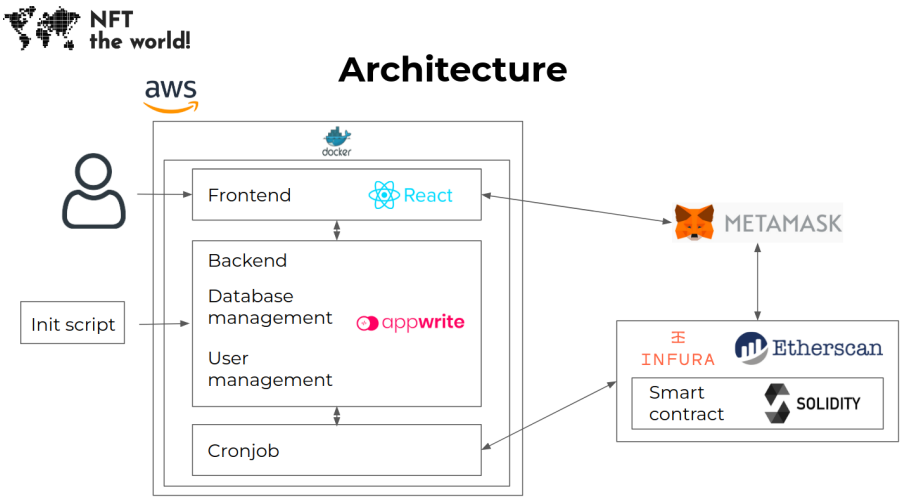

Figure 1: Architecture

For more details, there are `README.md` files within some directories like `./frontend/` and `./blockchain/`.

There is also a wiki page which gives an overview over the repository artifacts.

You'll find a link in the Software architecture description is mentioned.

1.2 Decentralization

To ensure, that the sold NFTs don't depend on our server deployment, we aimed for a design that allows users to fully utilize their tokens (whatever that means) even without our backend server. In order to achieve that, images of NFTs are stored in the InterPlanetary File System. The Token themselves are store in the Ethereum Blockchain. (In the standard configuration the Kovan Testnet it used which involves no real money.)

1.3 Scalability

Although all the important functionality is decentralized and highly resilient, our service is built on docker containers and thus easily scalable, to ensure smooth operations during times with high traffic (drops).

1.4 Security

All important transactions happen directly on the blockchain, meaning that the ownership of the NFTs is tracked outside the webservice. The only user data, that is stored in our backend are:

- mail addresses
- usernames
- passwords (salted and hashed)
- group memberships (Partner, Admin)
- announcements (some kind of news messages shown in the app)

Appwrite implements some default level of security when using API-calls like a minimum password, one-time password recovery, limited number of sequential requests (to prevent spam), session keys and privileges.