

MyPub

A Decentralized Privacy-Preserving Publishing Platform

分権型のプライバシー保護の出版プラットフォーム



About me

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About MyPub

<https://github.com/yepengding/MyPub>

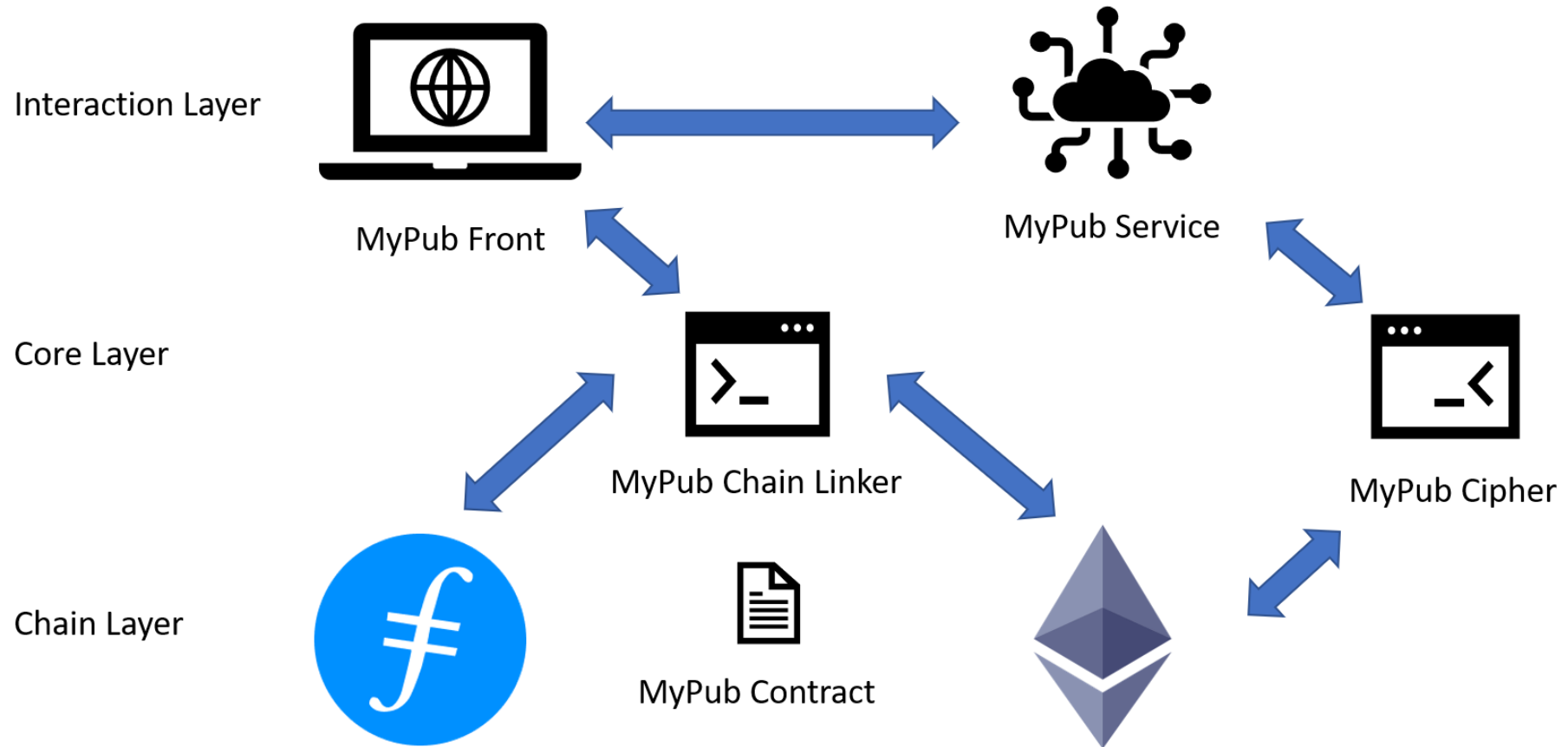
Motivation

- Centralized Publication Issues
 - Paywall for readers,
 - Low flexibility (e.g., pricing, gain sharing) for authors,
 - Huge cost caused by multiple participants,
 - Rights (e.g., copyright, ownership) solidification and transfer,
 - Centralization issues (e.g., single point of failure, data tampering)
- NFT Market Challenges
 - Large and secure data storage,
 - Private data sharing (confidentiality),
 - Right to use without acquiring ownership

Demo

- Full demo (11')
 - <https://youtu.be/BAB9LXLFbzo>
- Quick demo (4') with Japanese audio
 - <https://youtu.be/iWzx6xJPVAw>

Architecture



Components

- MyPub Front + Chain Linker
 - <https://github.com/yepengding/MyPub/tree/main/ui>
- MyPub Contract
 - <https://github.com/yepengding/MyPub/tree/main/contracts>
- MyPub Cipher
 - <https://github.com/yepengding/MyPubEncryptor>
 - <https://github.com/yepengding/MyPubDecryptor>
- MyPub Service
 - <https://github.com/yepengding/MyPubService>
- IPFS Server API Simulator
 - <https://github.com/yepengding/IPFSServerAPISimulator>

Feature 1: Publication as NFT

- Authorityless publication
- Copyright solidification
- Tradable ownership
- Traceable transaction history
- Integrity
- Decentralized Cryptographic Storage

Feature 2: Technically Supported Rights

- Copyright
- Ownership
- Right to use

Feature 3: Technically Supported Rights

- Fairly large data persistence
- Privacy-preservable data storage and sharing
- CIA (Confidentiality + Integrity + Availability)
- Decentralized decryption
- Traceable distribution

MyPub Front

- User-centric frontend application.
- Providing friendly graphical user interface to interact with MyPub system.
- Tech Stack (JavaScript)
 - React
 - Redux
 - react-bulma-components
 - styled-components
 - Other scaffolds (e.g., Node.js, webpack, ...)

MyPub Contract

- On-chain smart contracts.
- Providing support for NFT-associated functionalities.
- Tech Stack (Solidity)
 - Truffle Suite
 - OpenZeppelin

MyPub Chain Linker

- Connector between MyPub Front and MyPub Contract.
- Encapsulating blockchain operations and providing high-level APIs for MyPub Front.
- Tech Stack (JavaScript)
 - Ethers.js
 - IPFS Server API Simulator

IPFS Server API Simulator

- A simple IPFS server.
- Simulating common APIs of an IPFS server for a quick start to interact with an IPFS server.
- Tech Stack (Java)
 - Spring Boot
 - Spring Web
 - Thymeleaf
 - Spring Data JPA
 - H2 Database
 - Other utils (Guava, Swagger, ...)

MyPub Cipher

- Cipher suite.
- Providing encryption and decryption support for publications.
- Tech Stack (Rust)
 - age
 - clap
 - ethers
 - tokio
 - Other utils (k256, hex-literal, ...)

MyPub Service

- Backend web application.
- Providing computing support for application-level services.
- Tech Stack (Java)
 - Spring Boot
 - Spring Web
 - Thymeleaf
 - Spring Data JPA
 - H2 Database
- Extensible Tech Stack
 - Database: SQL (e.g., MySQL) + NoSQL (e.g., MongoDB)
 - Microservice framework (e.g., Spring Cloud, ...)
 - Middleware (e.g., RabbitMQ, WebSocket, ...)
 - Containerization (e.g., Kubernetes, Docker, ...)
 - CI/CD (e.g., Jenkins, ...)

Thank You!