



hypeRoot: Enhancing Rootstock with Hyperledger Fabric Interoperability



Introduction

hypeRoot is a cross-chain bridging platform for **Rootstock** and **Hyperledger Fabric**, tailored for enterprises. It facilitates locking of RBTC tokens on Rootstock and issuing equivalent tokens on their Hyperledger Fabric network. This flexibility, combined with the ability to customize functions suitable to their Fabric network, makes hypeRoot a valuable tool for integrating public and private blockchain benefits.

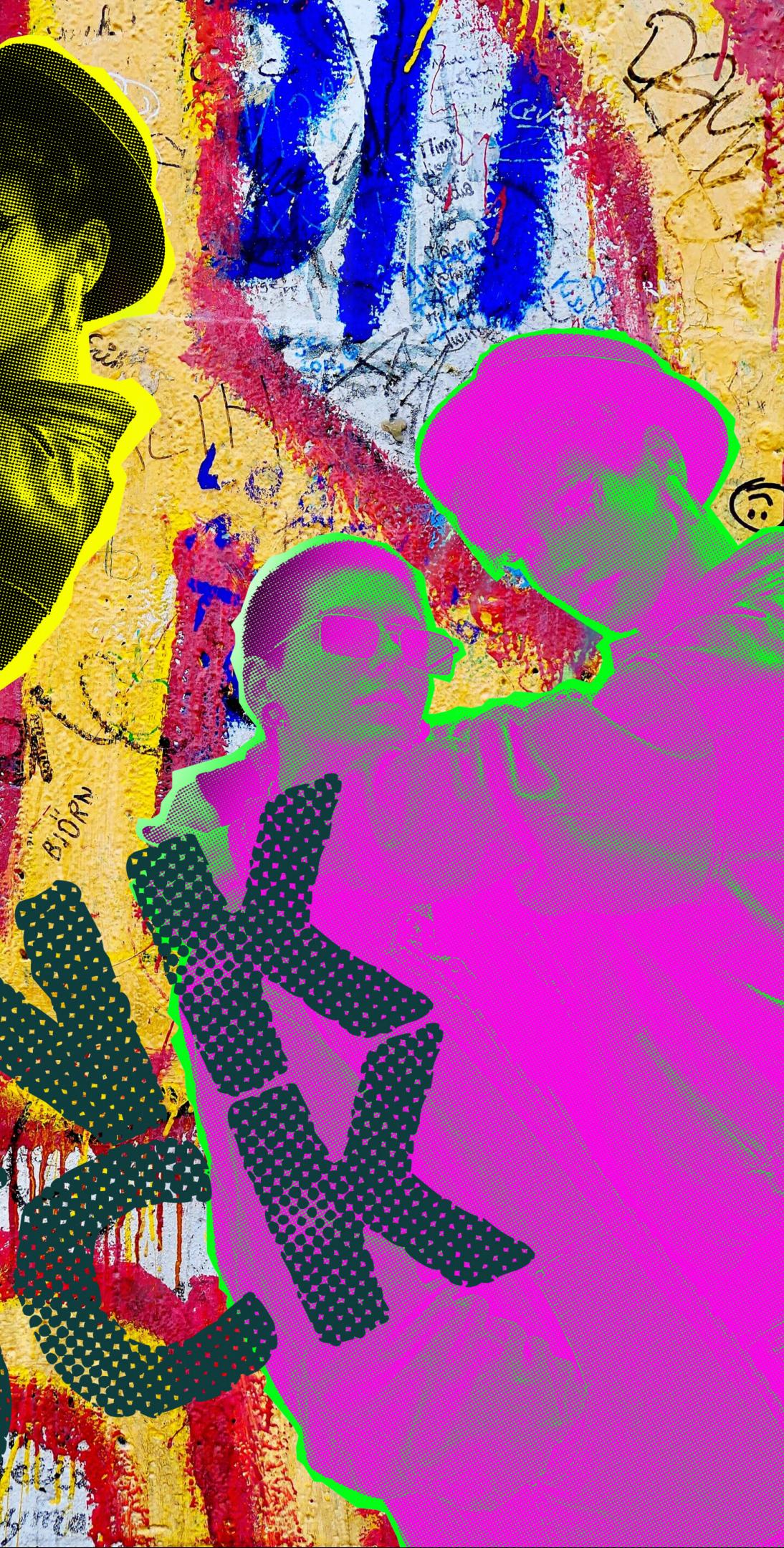
The Challenge

Enterprises worldwide are increasingly adopting blockchain technologies like Hyperledger Fabric due to their inherent security and efficiency. However, when it comes to interacting with public blockchains such as Rootstock, they encounter certain challenges. Although transactions on public blockchains are secure and transparent, they may not provide the degree of privacy required by some enterprises. Moreover, the task of managing and tracking transactions across diverse platforms can be complex and time-consuming, posing additional hurdles for seamless operation.

What is the solution?

- hypeRoot serves as a bridge between the Rootstock and Hyperledger Fabric networks, enabling enterprises to lock RBTC tokens on Rootstock smart contract and receive equivalent Fabric tokens on their Hyperledger network.
- The platform allows enterprises to unlock or transfer these Fabric tokens within their network as needed, and provides the flexibility to customize chaincode functions according to their specific requirements.
- hypeRoot charges a minimal and fixed fee of 0.00001 RBTC per locking transaction, which is nothing compared to the gas fee saved.
- By seamlessly integrating the advantages of both public and private blockchains, hypeRoot significantly enhances enterprise operations.





Components and Workflow

- `hypeRoot` utilizes key components: The frontend application is built with JavaScript and Ethers.js for interacting with the RSK network, the backend RESTful API server is developed using Node.js and Express.js, the smart contract on the RSK network is implemented in Solidity, and the Chaincode on the Hyperledger Fabric network is written in JavaScript.
- The workflow is straightforward: Enterprises lock RBTC on the RSK network and are issued equivalent tokens on the Fabric network, which can be unlocked or transferred as needed.
- The frontend application interacts directly with the RSK network and communicates with the backend server for operations on the Fabric network, ensuring a seamless interaction between the two.



Potential Use Case

hypeRoot could revolutionize performance-based incentive systems within companies. A company could issue Fabric tokens to employees based on their performance. These tokens could then be used within a private Hyperledger Fabric network to purchase company-sanctioned products or services, ensuring both privacy and security. Rootstock provides the added security and transparency of the Bitcoin network, and its smart contracts could be used to automate the issuance and redemption of RBTC tokens based on predefined rules. The system allows companies to control how tokens are spent and could automatically reject unsuitable transactions. This scenario demonstrates how HypeRoot can provide a more efficient, transparent, secure, and flexible way for companies to manage performance-based incentives, benefitting both the organization and its employees.

Conclusion

hypeRoot, as a pioneering solution, bridges RBTC to Hyperledger Fabric, enabling enterprises to enjoy the synergies of both private and public blockchains. For future enhancements, we envisage developing more customized functions for specific enterprise needs within the Fabric network, incorporating advanced security measures and refining the user interface for a more intuitive experience.

Thanks!