End-to-End secure distributed system using blockchain

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Problem Statement

The objective of the research is to design and develop an end-to-end secure distributed system using blockchain technology.

Significance of Problem

In the case of businesses involving multiple participants there are some important requirements like Business continuity, End-to-end security, Privacy etc., which are expected to be fulfilled by the underlying technology.

Existing Works and Potential for Improvements

By leveraging features of blockchain technology many platforms have been developed addressing some of the requirements, but majorly these platforms (BITCOIN, Ethereum) are public which are not suitable to carry out any businesses. Though there are some platforms (Corda, Hyperledger Fabric) where a business can be carried out, our findings show that there are some potential improvements still needs to be addressed.

Proposal

In this project we propose to design and develop an end-to end secure blockchain platform by leveraging the features of blockchain data structure for data layer security and classical distributed system properties like consensus algorithms, fault tolerance and arrive at a model suitable for present-day business requirements.
Readers Writers Flow Model(RWFM), an information flow control model can be leveraged to develop an application development framework that enforces the applications to provide end-to-end security.