



SChain

A Scalable Consortium Blockchain Exploiting Intra- and Inter-Block Concurrency

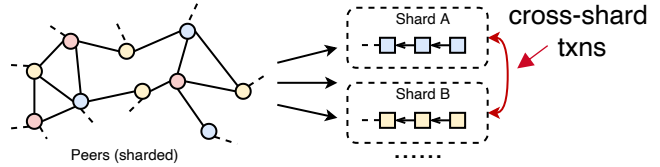


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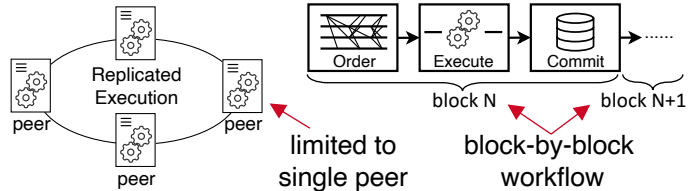
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Background and Motivation

- ◆ Consortium blockchain needs **more transaction processing** to support large-scale businesses in enterprise collaborations
- ◆ Existing solutions such as sharding¹ and incorporating concurrency² introduce new problems



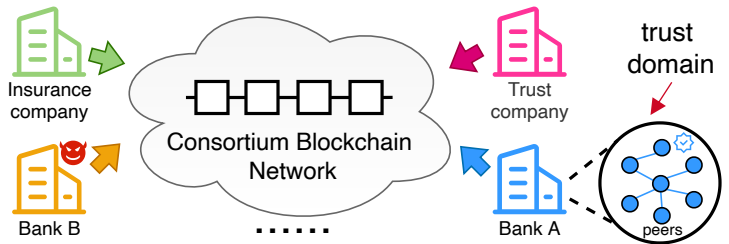
Problem¹: INEFFICIENT



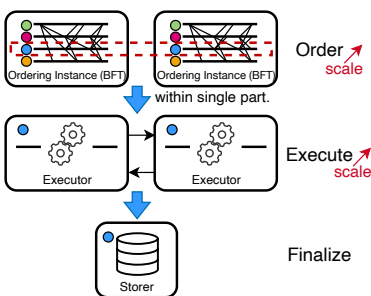
Problem²: LIMITED & QUIESCENT

SChain Solution

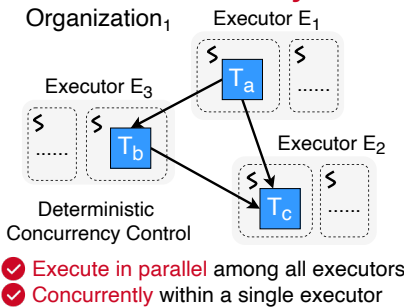
- ◆ Scale the consortium blockchain in terms of each participant based on **TRUST DOMAIN**
- ◆ Exploit Intra- and Inter-Block concurrency



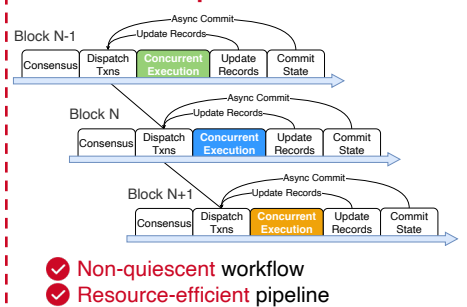
Design 1: Scalable Paradigm



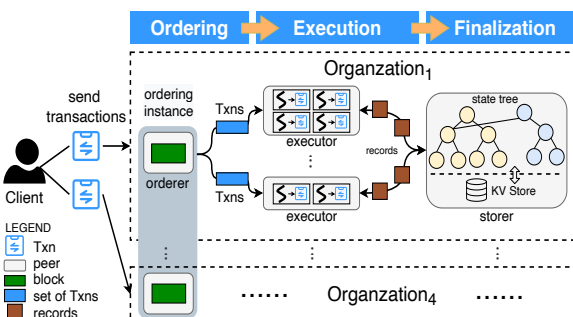
Design 2: Intra-block Concurrency



Design 3: Inter-block Pipeline



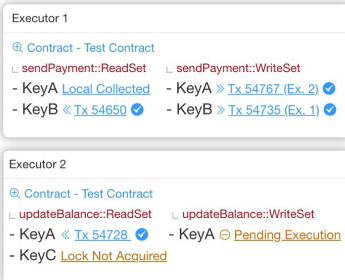
Demonstration Details



Demo Implementation

1) Gain Insight into

Intra-Block Concurrency - distributed concurrent execution



2) Investigate into

Inter-Block Concurrency - transaction streaming pipeline

