Abstract

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Enhancing the performance of the blockchain consensus algorithm using multithreading technology

Blockchain is one of the most powerful and promising technologies nowadays in the IT industry. One of Blockchain’s main features is the presence of a Consensus Algorithm, which is responsible for maintaining the security and integrity of the entire blockchain network where all the nodes participating in the network reach a certain agreement. However, some algorithms like the Proof-of-Work require very high energy consumption to reach a single agreement by solving a puzzle and provides a low throughput (3-7 transactions/second), thus, it may not be very reliable in blockchain solutions. In this paper, we aim to provide a reliable choice for different business use-cases by proposing a modification in the Istanbul Byzantine Fault Tolerance voting-based algorithm that provides a higher throughput (up to 1140 tx/s), which will be very important to be used in the use case called a letter of credit which is a part of trade finance (relation between exporter, importer and the bank institutions).