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Comparative analysis and applicability determination for several DLT solutions

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Potential benefits of implementation of distributed ledger technology are widely discussed among different business actors and governmental structures. Within the last decade, with growing popularity of blockchain-based payment systems and cryptocurrencies, these discussions considerably sharpened. Therefore, an extensive body of research has emerged on this soil. The goal of this study is to attempt to make a comparative analysis of several existing blockchain-based distributed ledger platforms. Besides that, authors overview the most commonly used consensus algorithms and design approaches, as for any blockchain product, consensus algorithm is a crucial part which determines the performance of the overall system. Choosing the right algorithm would ensure high reliability and throughput, while the wrong choice could cause fatal malfunctions for the application. A suitable algorithm usually should be chosen according to the task in consideration, e.g. Nakamoto-style protocols could be considered better for public networks, while multi-round voting protocols are more suitable for private and secure systems. The highest attention is paid to consensus algorithms based on the solution of the Byzantine Fault Tolerance problem (BFT).

Byzantine Fault Tolerance problem, distributed ledger technology, multi-round voting protocols

Summary

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