

Enhancing Blockchain Performance via Unikraft: A Case Study of Implementation and Scalability Analysis on MultiversX

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Blockchain technology is rapidly gaining traction and is poised to revolutionize various sectors including healthcare, supply chain management, identity management, and intellectual property. Key features such as decentralization, immutability, traceability, and transparency have driven its mainstream adoption. However, as blockchain is still in its early stages, it must overcome significant challenges to become integral to essential applications and use cases.

A primary challenge is scalability. Current solutions include sharding, consensus-protocol-based methods, and off-chain approaches. We introduce an alternative scalability strategy aimed at enhancing the performance of individual blockchain nodes, thereby improving the overall infrastructure's scalability through the use of unikernels. We leverage Unikraft, an open-source unikernel solution, to achieve this. We provide a detailed exploration of the application porting process using Unikraft and MultiversX technology.

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