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Elevating Cloud Security via Serverless Computing: An in Depth Exploration

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Abstract: *The research aims to elucidate the transformative potential of serverless architecture in enhancing cloud security, addressing common threats, and mitigating vulnerabilities. Through a systematic review of existing literature, empirical experiments, and case studies, the study delves into the underlying principles of serverless architecture, explores its advantages, challenges, and practical applications, and evaluates its performance and scalability compared to traditional computing models. The findings underscore the scalability, cost-effectiveness, and simplicity of serverless computing, while also highlighting challenges such as cold start latency and vendor lock-in. Moreover, the research identifies key recommendations and best practices for designing, deploying, and managing serverless applications, offering valuable insights for industry practitioners, researchers, and policymakers. Overall, the study contributes to a deeper understanding of serverless computing and its role in shaping the future of cloud-native application development*

Keywords: Cloud Computing, Serverless Computing, Serverless Architecture, Cloud Security

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