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Improving Token Based Authentication

A dissertation by

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ABSTRACT

In the rapidly evolving world of microservices architecture, securing and managing user identities has become a critical concern. Traditional Identity Providers (IdPs) are often cumbersome, resource-intensive, and costly.

The need for a lightweight, efficient, and scalable IdP solution that can seamlessly integrate with microservices-based systems is growing. This research proposes a novel low-weight IdP leveraging Java microservices, MSF4J, REST API, and JSON Web Tokens (JWT) in order to overcome this problem.

We conducted extensive performance and scalability tests on our lightweight IdP solution under various workloads and deployment scenarios. The test results demonstrated that the proposed IdP outperforms traditional solutions in terms of resource utilization, response time, and throughput.