

THARSANAN KURUKULASINGAM

Senior Software Engineer at WSO2

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Professional experience

WSO2

Senior Software Engineer

Dec 2021 - Present

WSO2 API Manager

- leading a development initiative focused on minimizing APK's memory consumption. This involves two main strategies: rewriting a critical Java-based enforcer in Go, and leveraging Envoy filters to offload key enforcing functionalities. this will significantly reduce the memory footprint of the APK, positioning it as a lightweight and competitive solution in the market.
- Led the evaluation and implementation of EnvoyGateway within the APK system. Analyzed and proposed utilizing the extension server mechanism, conducted internal presentations and a successful Proof-of-Concept (POC) project. Successfully advocated for the integration of EnvoyGateway into the upcoming major APK release (October) by presenting the findings to senior leadership.
- Led the development and successful implementation of a proof-of-concept demonstrating the use of Cilium Gateway for both service mesh and API management functionalities
- Successfully engaged with prospects through calls and demos, effectively addressing their queries, concerns, and technical blockers, contributing to positive customer interactions.
- Improved product performance by 666% (from 150 to 1000 APIs) by identifying and fixing bottlenecks through load/performance testing and code changes (e.g., GitHub issues [#1905](#), [#1935](#), [#1936](#), [#1966](#)).
- Identified and mitigated a critical security vulnerability in the APK Enforcer code. Conducted a thorough performance and security review, discovering a potential Denial of Service (DoS) vulnerability stemming from inefficient cache management of access tokens and JWT IDs.
- Designed and implemented key features including subscription-based and backend-based token rate limiting for AI APIs, analytics for AI API requests, APIM integration as CP for APK, Kubernetes Gateway compliance, JWT-based authentication, performance optimization, gateway management, protocol and port flexibility, security features (OAuth2 token revocation, configurable JWT headers), API usability (default version support, configurable JWT authentication), and developed a Helm Chart for APK. [Link](#)
- Designed and implemented SalesforceBulkAPI v2.0 wso2 connector. [Link](#)
- Designed and implemented Jenkins job for automating APIM profile automation testing in AWS EKS. The solution removed manual profile testing in the patching process. [Link](#)
- Designed and implemented testing solution for APIM profile testing. The solution covers ~80% of APIM core functionalities. Developed Jmeter test scripts. Implemented custom bash scripts to identify unexpected behavior of the application using log processing. [Link](#)
- Migrated WSO2 Integration Studio runtime to Eclipse 2021 from Eclipse 2019. The migration enabled the team to develop new features. [Link](#)

Enactor

Senior Software Engineer

Sep 2021 - Dec 2021

- Led a sub team in Enactor payments and managed Enactor Payments ecommerce related tasks. Managed DEV and Test environment deployments in AWS using docker swarm.
- Designed and implemented 'Klarna pay by link' and 'Klarna token flow' functionality to Enactor Payments.
- Designed and implemented 'Enactor pay by link' in Enactor Payments.
- Implemented Cucumber automated tests for the above mentioned features.

Enactor

Software Engineer

Feb 2020 - Sep 2021

- Ecommerce Web Payment Feature: Designed and implemented an e-commerce web payment feature for Enactor Payments, achieving 100% test coverage for all core functionalities using Cucumber for backend testing.
- Enhanced Security with 3DS Implementation: Successfully implemented 3DS functionality for Enactor Payments, achieving accreditation with major card networks (Mastercard, Visa, Amex).
- Streamlined Accreditation Processes: Successfully accredited the Enactor Payment Portal with Elavon and Amex. Developed an automated accreditation test runner, significantly exceeding expectations by completing the task within 4 weeks, surpassing the initial 3-month ETA.

Google summer of code

2019

- Designed and developed IntelliJ plugin for CPAchecker tool. [Link](#)
- Used Gitlab CI/CD for testing code style, bugs and for deployment.

Sysco LABS

Software Engineering Intern

July 2018 - Dec 2018

- Designed and developed resource management system to track SyscoLABS's aws resources.
- Dockerized multiple products to support ECR deployments.

University of Moratuwa*B.Sc. Eng (Hons) in Computer Science and Engineering*

GPA - 3.8 (First class)

Technical skills**Languages:** GoLang, Java, Python, Javascript, C++**Databases:** MySQL, MongoDB, Postgres**Technologies/Frameworks:** NodeJS, ReactJS, Cucumber, Git, Linux, Jmeter, Jenkins, MatterJS**Cloud related:** Kubernetes, AWS, Docker, Helm*More documentation of experience, references and skills are available upon request.**Last updated - 23.01.2025*