Loosely Coupled Microservice Architecture for Internet of Things

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Abstract

Microservice architecture can be futher extended to cover the Internet of Things. Prior to Microservice architecture, Service Oriented Architecture (SOA) has been used for designing and orchestrating services but with limitation of scaling. Microservice has been reported to be able to scale services better and in order to achieve this services must be in form of loosely coupled. Internet of Things must be considered and included in designing service system today in order to build seamless service system. However, designing and combining Internet of Things with service system is not straight forward as it will introduce complexity to the system especially if it is not designed and planned properly. It is also hard to scale a service system if it is in form of centralized and tightly coupled manner. Therefore, it is important to understand how this problem will effect the service system and find the solution to overcome this problem. Promise theory has been looked as a possibility to be adopted in designing a loosely coupled microservice system for Internet of Things. This paper is about the preliminary studies and works that have been done in using Promise theory to understand and designing loosely coupled microservice architecture for Internet of Things.

Keywords
Internet of Things, Microservice, Promise Theory, Service System

Biography

Ahmad Tarmizi Abdul Ghani is a PhD candidate at Faculty of Information Science and Technology, Universiti Kebangsaan Malaysia, Malaysia. He earned Bachelor in Information Technology from Universiti Kebangsaan Malaysia, Malaysia, Masters in Network and E-Business Centred Computing from University of Reading, UK, Aristotle University of Thessaloniki, Greece and Universidad Carlos III de Madrid, Spain under Erasmus Mundus Program sponsored by EU. He has become a researcher for Data Mining and Optimization Research Group in Universiti Kebangsaan Malaysia for nearly 10 years. His research interests include information systems, service oriented architecture, internet of things, big data, and cybernetics.

Mohamad Shanudin Zakaria is an Associate Professor at Faculty of Information Science and Technology, Universiti Kebangsaan Malaysia, Malaysia. His research area is in the alignment of business and Information Technology. Experience for more than 20 years in Information Technology as a researcher and also as a lecturer. He received both his first and master degree from Northtrop University, California, USA in the year of 1984 and 1985 respectively. Then, he was awarded with PhD from Universityof Reading, United Kingdom in the year 1994. He was the Head of Director for Center of Information Technology, Universiti Kebangsaan Malaysia from 2010 to 2016.