Aalto University
School of Science
Bachelor's Programme in Science and Technology

Security in Microservice Architecture

- Impact of a Switch from Microservices to Monolith Architecture

Bachelor's Thesis

xx. xxxxxkuuta 2020

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Aalto-yliopisto
Perustieteiden korkeakoulu
Teknistieteellinen kandidaattiohjelma

KANDIDAATINTYÖN
TIIVISTELMÄ

Tekijä:	Tommi Jäske
Työn nimi:	Turvallisuus mikropalveluarkkitehtuurissa - Monoliitisesta arkkitehtuurista siirtyminen mikropalveluarkkitehtuuriin ja sen vaikutukset.
Päiväys:	xx. xxxxxkuuta 2020
Sivumäärä:	?
Pääaine:	Computer Science and Engineering
Koodi:	SCI3027
Vastuuopettaja:	Professori Eero Hyvönen
Työn ohjaaja(t):	Professori Tuomas Aura (Tietotekniikan laitos)
Kirjoitetaan myöhemmin.	
Avainsanat:	avain, sanoja, niitäkin, tähän, vielä, useampi, vaikkei, niitä, niin, montaa, oikeasti, tarvitse
Kieli:	Suomi

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ABSTRACT OF
BACHELOR'S THESIS

Author:	Tommi Jäske
Title of thesis:	Security in Microservice Architecture - Impact of a Switch from Microservices to Monolith Architecture
Date:	MonthName 31, 2020
Pages:	?
Major:	Computer Science and Engineering
Code:	SCI3027
Supervisor:	Professor Eero Hyvönen
Instructor:	Professor Tuomas Aura (Department of Computer Science)
Will be written.	
Keywords:	key, words, the same as in FIN/SWE
Language:	English

Contents

1 Introduction

Microservice Architecture (MSA) differs in many ways from the more tradition Monolith Architecture (MA). In this thesis the security aspects when using MSA are investigated. This thesis studies current literature and finds the main differences between MA and MSA security aspects. TODO rajaus

2 Definitions

2.1 Architecture

2.2 Microservice

A microservice is a service that: is independently deployable, is modeled around business domain, that owns the data that they need to operate, that communicates via network, is technology agnostic, that encapsulates data storage and retrieval and that has stable interface (Newman, 2019).

2.3 Monolith

2.3.1 Security

Security can be defined in multiple ways but in this thesis security and more specifically information security is defined as consisting of Confidentiality, Integrity, and Availability (CIA) as is stated in the ISO/IEC 27001 -standard for information security (Schulzrinne et al., 2003).

3 Unknown

One way of building software is to use a Monolith Architecture (MA). In this way of organizing the structure the whole application or service is usually deployed as a whole and the program code can be compiled, tested and used as a unit. In contrast to this a service implementing a Microservice Architecture (MSA) can be deployed in single microservice units and thus a single service can be worked upon individually.

3.1 Microservice

TIK.kand suositus: Numerointi aloitetaan arabialaisilla numeroilla nimiölehdestä kuitenkin niin, ettei numeroa kirjoiteta sille. Siten ensimmäisen tiivistelmäsivun sivunumero on 2. Kirjasinkoko on 12, riviväli 1,5. Tekstiviitteissä käytetään nimi-vuosi-järjestelmää, mutta tässä ohjaajan sana on määräävä.

3.1.1 Lähdeluettelo

4 Conclusion

References

S. Newman. *Monolith to Microservices. Evolutionary patterns to transform your monolith.* O'Reilly Media, Inc., 2019. ISBN 9781492047841. 1st edition.

H. Schulzrinne, S. Casner, R. Frederic and V. Jacobson. Information technology. Security techniques. Information security management systems. Requirements (ISO/IEC 27001:2013 including Cor 1:2014 and Cor 2:2015), July 2003. Status: DRAFT STANDARD.