

UNIVERSITY OF TARTU
Institute of Computer Science
Software Engineering Curriculum

Mehmet Çelen

Migrating Monolithic Architecture to Microservices: A Case Study

Master's Thesis (30 ECTS)

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Resümee/Abstract

Monoliitse Arhitektuuri Migreerimine Mikroteenusteks: Juhtumiuuring

Mikroteenused on viimastel aastatel muutunud populaarseks kuna enamus organisatsioone eelistavad üle minna oma monoliitsetelt rakendustelt rohkem eskaleeritavatele ja kiire arenguga keskkondadesse, kus on võimalikud kiired muutused ning uuendused. Siiski, tuleb organisatsioonidel mikroteenuseid kaalutleda enne nendele migreerimist. Lisaks oma eelistele ning puudustele monoliitse arhitektuuriga võrreldes, võib migratsiooni protsess olla organisatsioonidele vaevaline ning aeganõudev, kui strateegia ei ole süsteemne ja astmeline. Uuring sisaldab juhtumit väikeettevõttelt, kes on valmis laiendama oma toiminguid ning arendust rohkemate äritegevustega. Käesolev töö uurib migratsiooni tehnikaid ja kohaldab migratsiooni lahenduse antud juhtumile.

CERCS: P170 Arvutiteadus, arvutusmeetodid, süsteemid, juhtimine; P175 Informaatika, süsteemiteooria; T120 Süsteemitehnoloogia, arvutitehnoloogia

Võtmesõnad: Mikroteenused, tarkvara arhitektuur, süsteemi ümberkujundamine, rakenduste migratsioon

Migrating Monolithic Architecture to Microservices: A Case Study

Microservices has become popular in recent years as most organizations prefer to migrate their monolith applications to more scalable and rapid development environments where they can have fast changes and releases. However, microservices need to be considered by organizations before migrating to. Not only it has advantages and disadvantages compared to monolithic architecture but also the migration process can be painful and time-wasting for the organizations if the migration strategy is not systematic and gradual. The study includes a case from a small-scaled company which is willing to extend its operations and development with more business functionalities. This study explores the migration techniques and applies a migration solution for the given case.

CERCS: P170 Computer science, numerical analysis, systems; P175 Informatics, systems theory; T120 Systems engineering, computer technology

Keywords: Microservices, software architecture, system transformation, application migration

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