Topic:

Prototypical Development of a Docker-based Workflow Management System

Masterthesis

in the subject at the Department of Information Systems — Practical Computer Science

Supervisor: Prof. Dr. Herbert Kuchen Tutors: MScIS Vincent von Hof

Submitted by: Lars Greiving

Dettenstraße 4 48147 Münster

+49-176 704 253 17 l_grei02@uni-muenster.de

Deadline: 2016-02-24

Contents

C	ontents	I
Li	st of Figures	II
Li	st of Tables	.III
Αl	obreviations	.IV
Sy	mbolverzeichnis	V
1	Introduction and Motivation	1
	1.1 Research Methodology	1
	1.2 Concepts and Terminology	1
	1.2.1 Workflow Management Systems	1
	1.2.2 Docker	1
	1.3 Related Work	1
2	Solution Design	2
	2.1 Problem Identification	2
	2.2 Derivation of Objectives	2
	2.2.1 Functional Requirements	2
	2.2.2 Intangible Requirements	2
	2.3 Architecture	2
	2.3.1 Application Architecture	2
	2.3.2 Workflow Enactment Environment	2
	2.3.3 Workflow Management Environment	
	2.3.4 Developer Client	2
	2.3.5 User Client	2
3	Prototypical Implementation	3
	3.1 Toolchain	3
	3.2 Realization of the Architecture	3
4	Evaluation and Discussion	4
5	Conclusion and Outlook	5

List of Figures

List of Tables

Abbreviations

Symbolverzeichnis

a_0	Anschaffungsauszahlung in $t = 0$
C	Kapitalwert
dt	Einzahlungsüberschuss in bezug auf t
i	Kalkulationszinsfuß
n	Nutzungsdauer
q	Zinsfaktor $1+i$
r_s	Abstand der Stufe s in cm vom Seitenrand
S	Stufenindex
t	Periodenindex

1 Introduction and Motivation

- 1.1 Research Methodology
- 1.2 Concepts and Terminology
- 1.2.1 Workflow Management Systems
- 1.2.2 Docker
- 1.3 Related Work

2	Solution Design
2.1	Problem Identification
2.2	Derivation of Objectives
2.2.1	Functional Requirements
2.2.2	Intangible Requirements
2.3	Architecture
2.3.1	Application Architecture
2.3.2	Workflow Enactment Environment
2.3.3	Workflow Management Environment
2.3.4	Developer Client

2.3.5 User Client

- 3 Prototypical Implementation
- 3.1 Toolchain
- 3.2 Realization of the Architecture

Any Compromises here?

4 Evaluation and Discussion

5 Conclusion and Outlook