Vertraulichkeitsanalyse mit Data-Centric Palladio
Proposal

Proposal of

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xx. Month 20XX – xx. Month 20XX

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I declare that I have developed and written the enclosed thesis completely by myself, and have not used sources or means without declaration in the text.

PLACE, DATE

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(Julian Hinrichs)

Abstract

English abstract.

Zusammenfassung

Deutsche Zusammenfassung

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1.1. Introduction

This Proposal

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2.1. Componentbased systems

Componentbased systems consists of, as the name states, components. A component is a unit of code in which a functionality is encapsulated. For clarification, in big systems you have components handling the access to a database, components for the UI and so on. The different components communicate with each other via predefined Interfaces. Note that a componentbased system is modular, which means you can easily swap components in and out. Often it is possible to reuse design know-how from other components.
In the next section, I will give a brief overview over CoCoME, the system I am going to work on and a big part of my upcoming thesis.

2.2. CoCoME

CoCoMe is a componentbased System, which are abstracts the inventory-management and selling process of a big vendor like Lidl. This system is componentbased (2.1). It consists out of many components, which handle the differnet Use-Cases for CoCoME. THe following list is a quick overview of what CoCoMe is (currently) able to achieve.

- Selling goods with express checkout
- Order products for the inventory and review the ordered products.
- adding different services through an API.
- Connectiong to a database

Currently, there are various variants of CoCoME, which were developed over time.The codebase, used technologies and the deployment may vary on each variant. Likewise for some variant there are also evolutionary scenarios that may change the deployment of CoCoME or adding additional technologies to the system.
The following sections are used to introduce all of the mentioned variants.

2.2.1. Plain Java Variant

This variant is one the first implementations of the CoCoMe system. It was implemted in Java and does not use any JavaEE technologies. Also it contains the core components for the inventory-management and the cashdeskline, where the selling of itmes is handled. Note that an User Interface is not implemted yet.

2.2.2. Service Based Variant

This variant puts a web-service-layer(WSL) on top of the components implemnted in the Plain Java Variant (2.2.1). The additional WSL allows to add different services fairly easy to CoCoME. Such services could be, for example, an User Interface or some analytics tool.

2.2.3. Hybrid Cloud-based Variant

This variant adds a frontend to the already existing backend (2.2.1 and also keeps the additional layer (2.2.2). This variant evolved from the Plain Java Variant (2.2.1) by relocating some resources to a cloud environmentand implementing four evolutionary scenarios, which are described in the following sections.

2.2.3.1. Platform Migration

This evolution transfers the attached database to the cloud.

2.2.3.2. Adding a PickUp-shop

The concept of a PickUp-shop is, that a customer orders goods online and pay them directly or pay at the PickUp-shop . The purchased goods are provided by the chosen PickUp-shop, where the customer collect them. In this scenario CoCoME changes from a closed system (finite employees access from finite locations) to an open system (user may connect from all over the world). This system may be deployed on one or various servers. The specification states at least three different servers.

2.2.3.3. Database Migration

In this case the CoCoME system deploys the database in a cloud-environment. The purpose of the decison is, if CoCoME grows in user numbers that the scalability of the current cloud isn't sufficient enough anymore and more CPU power is needed. Note that, this change of the cloud environment can be done during the runtime.

2.2.3.4. Adding a Service Adapter

The service adapter is a technique to abstract the database access. Its mainly used the not be raliant to the layout of the underlying database by adding a layer of abstration

2.3. Definitions

In this section I will give a definition of some important terms and concepts which are widly used inside this proposal and the upcoming thesis.

2.3.1. Confidentiality

2.3.2. Data protection

2.3.3. Dataflow

2.3.4. Constraints

3. Concept

3.1. Scenario

Possible scenarios are:

- UC13 is a violation, because the stockmanager has access to one specific customer. This violates the data protection.
- trivial illegal dataflow

3.2. Evaluation

4. Organisation

A. Appendix

A.1. First Appendix Section

Figure A.1.: A figure

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