Cloud Native Project - Cloud Application Development – Winter Term 2024/25

Project Team: Mercedes-Benz

# Requirements

Give a short introduction into the system scope and main features.

## System Context

Provide a **system context diagram** of the application and give a description of all neighboring systems and actors.

## Use Case Overview

Provide a **Use Case diagram** and a brief description (2-3 sentences) of each Use Case and Actor.

# Development View

## Software Components

Development time view on software components:

* Which repositories for the source code are used? How is the repository organized?
* What are the software components of your application?
* In which programming languages is the software written? What frameworks are used? Which important libraries are used?
* Which external interfaces do your components provide?

### Source code organization

### Components

### Libraries

### APIs

## Data Model

Describe the data model of persistent data.

* Describe the different persistent storages your application uses
* For each storage, define the data model (e.g. ER-Diagram, JSON Schema, …)

# Runtime View

## Runtime Overview

Describe the cloud resources (diagram) and the external interfaces and UI interfaces here.

Describe especially:

* Tenant identification approach
* Authentication mechanism

## Microservices

Give a detailed description of each microservice. Which software components belong to the micorservice (See chapter 2)? Describe for each tenant type:

* How is the service runtime configured?
* Is the microservice scalable? Is scaling handled manual or automatically?
* Is the microservice customizable?
* What is the security setup?
* What connections to external cloud services (e.g. datastores) exists?

## Datastores

Which storage containers exist at runtime and give a to the datamodel. Describe how data integrity and access restrictions are enforced for each tenant type. Describe how your datastore scales.

# DevOps

## Environments

## Roles and Role Mapping

## Pipelines and Release of new Features

## New Tenants

## Monitoring

## Load Testing

# Commerical Model

## Tenant types

Give list of the tenant types and describe common functionality and where tenant types differ:

* Functional capabilities
* Thresholds
* Isolation

## Pricing Model

Describe the pricing model for each tenant types. Define the parameters which determine the pricing and document free quotas and thresholds.

## Cost Model

Estimate the operational costs for each tenant types and discuss best / avg / worst case scenarios.