Master Thesis – State handling in a Cloud Environment

Background
When migrating legacy software to a cloud environment one issue faced is how to handle states. Legacy monolith application usually have an abundance of internal states that needs to be adapted when refactoring the monolith application into microservices. If the microservices keeps internal states it is harder to utilize the beneficial effects of cloud deployment such as scalability, high availability, and reliability. There are several ways to adapt the state handling for the microservices, for example replacing internal states with message parameters, moving states to an external repository, or using utility microservices for state handling.

Thesis Description
The main goal of the thesis is to evaluate different approaches to state handling for microservices in a cloud environment.

The following steps are envisioned as part of the thesis work:

• Investigate and compare different methods for state handling
• (Optional) Propose and implement separate method for state handling
• Evaluate promising methods using example application (developed as part of thesis)
• Analyze result and draw conclusions about the investigated state handling mechanisms

The thesis will be concluded with a result presentation for the Ericsson team.

Qualifications
This project aims at students in electrical engineering, computer science, computer engineering or similar. Background in distributed systems is preferred.

Extent
1-2 students, 30hp each

Location
Ericsson AB Mjärdevi, Linköping

Preferred Starting Date
Spring 2021

Keywords
Distributed Systems, Mobile Telecommunication, Cloud Computing

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