Academic year 2015-2016

Master thesis project

Topic

« Design of a highly scalable server architecture for medical data exchange »

Description

A7 Software is currently working on Andaman7 (see www.andaman7.com), a mobile application allowing to create, manage and share electronic health records[1] to improve collaboration between doctors and patients. It is composed of client applications running on mobile devices and a back end server written in Java, responsible for synchronizing data between them.

For now the server is hosted on A7 Software infrastructure. This is not good enough for a worldwide range application with sensible information like Andaman7. Computing and bandwidth needs are going to grow fast and the current infrastructure cannot scale easily.

The goal of this work is to migrate the server side of the application to a well-known and largely-used server hosting platform : Amazon Web Services.

The system has to be adapted to adopt particularities of this specific platform (decoupled storage, database and computing) while keeping what is already implemented in the current version. It has to use Amazon services to ensure availability, reliability and scalability. For this purpose, automation scripts will be written to ease VM creation and deployment. AWS load balancing will be used. Moreover, the storage policy has to be compliant with the local laws for storing medical data. Finally, the whole system has to run at the lowest cost possible.

This project requires a good knowledge of Java, infrastructure and development skills.

---

[1] http://en.wikipedia.org/wiki/Electronic_health_record