Thesis Work – Log analytics

1 Introduction

This paper describes a thesis work that is to be carried out at TeliaSonera in Uppsala, Strandbodgatan 1. We are a unit of about 200 people responsible for TeliaSonera's contact center offerings to enterprise customers. The thesis work should be performed by 1-2 students from an engineering, information systems or computer sciences program (2xB.Sc or 1xM.Sc.).

2 Background scenario

In an enterprise, customer service is often handled by a special organizational unit called the contact center. The contact center handles a company's customer interactions, such as telephone calls, email, chat, etc. A contact center platform is an application framework to handle customer interaction flows and directing each interaction to the most suitable agent. Agents working in the contact center log in to the framework which is configured with the agent skill, department, and other information which is used by the framework to correctly route interactions. Agents are provided with interaction information when the interaction is delivered, and may also have that information sent to legacy systems automatically to provide the agent with the background information needed to meet customer needs.

Due to the large interaction volumes in a contact center, huge amount of logs are written to disk each minute. In order to analyze these logs, intelligent solutions are needed.

3 Purpose

The purpose of this thesis work is to examine how to analyze logs in the context of the contact center. The work will be based on a contact center platform from Genesys. As a minimum, an analytics tool shall be built at TeliaSonera's lab. The following aspects/questions should be taken into account in the report, where the first three are the most important:

1. Use Cases: Define use cases for the tool. Where are logs and other needed information collected and what should be analyzed?

2. Design solution: Define and prioritize between possible solutions based on the use cases. Pros and cons? Which programming language and method is best suited for the tool?

3. Build: Create an application that collects log files from the different Genesys applications and correlates a customer interaction across these logs. Represent the interaction graphically, including the correlation and signaling between the applications.

4. Advanced functionality: Develop the tool so that it can compare several interactions. Represent the activiites of the different applications graphically during a given time.

5. Tests: Determine how the tool can be used during load tests of Genesys. What would be needed?

4 Suggested time plan

A preliminary start date would be Jan/Feb 2015 for M.Sc. programs and continuing during 20 weeks. For B.Sc programs the prelinary start date would be end of March 2015 and continuing during 10 weeks for two students.

Following is a rough estimate of the parts the thesis work should consist of and how many weeks each part needs.

1-2	Learn about the Contact Center platform and its different modules
3-14 (M.Sc) 3-8 (B.Sc)	Define different use cases and implement the tool
15-17 (M.Sc) 8-9 (B.Sc)	Consider the above listed aspects and prepare a summary with conclusions to be included in the report
18-20 (M.Sc) 9-10 (B.Sc)	Report writing

5 Applications

We look for students from the engineering, information systems or computer sciences programs (B.Sc or M.Sc.) with an interest in IT and telecommunications. The candidates should have good experience in C/C++, Java or .NET programming and be fluid in Swedish and English. Good communications skills and working well in a team are also important qualifications.

Your application, consisting of a personal letter and an attended courses register printout, can be sent to Jonas.vastibacken@teliasonera.com.