Thesis Work – Diagnostic tool for real time logs

1 Introduction

This paper describes a thesis work that is to be carried out at Telia in Uppsala, Strandbodgatan 1. We are about 200 people responsible for Telia's contact center offering to enterprise customers. The thesis work should be performed by 1 student from an IT engineering or computer sciences program (M.Sc.).

2 Background scenario

In a company, 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, web enquires, tweets, facebook messages 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.

On the server side a large quantity of information about contacts is stored in log files. By providing a secure and user-friendly tool for filtering this information we will be able to provide higher quality in our deliveries and a swifter response to customer complaints.

3 Purpose

The purpose of this thesis work is to examine the possibilities of implementing a secure and user-friendly way to filter real time logs in our production systems for Interactive Voice Response (IVR).

Each call into our IVR produces a great deal of information in log files regarding how the call is routed. This information is crucial when it comes to debugging and understanding how the system performs during certain circumstances.

The filtering tool used today is an extremely powerful tool for filtering these real time logs. But it requires administrative access to our servers and has a high threshold to be able to use.

We would like to make this tool more accessible for a wider range of users by simplifying how to access the information in a secure way and, by using modern techniques, lower the threshold for users.

The following aspects/questions should be taken into account:

1. Alternative solutions: Define and prioritize between possible solutions. Pros and cons?
2. Network integration: Draw the high-level architecture, what are the critical steps to pass, firewalls?
3. Security: Address and suggest solutions to security issues. Is the integrity of business and customer data preserved in accordance to PUL? How can access be provided in a secure way?

4. How much time and resources would be needed for implementation?

As a part of the thesis a Proof of Concept implementation of the tool shall be developed.

4 Suggested time plan

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

A preliminary start date would be in August 2017 continuing during 20 weeks.

<table>
<thead>
<tr>
<th>Week</th>
<th>Task</th>
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<tbody>
<tr>
<td>1-3</td>
<td>Learn about the Contact Center platform and system architecture</td>
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<tr>
<td>4-14</td>
<td>Define different use cases and implement an example</td>
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<tr>
<td>15-17</td>
<td>Consider the above listed aspects and prepare a summary with conclusions to be included in the report</td>
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<tr>
<td>18-20</td>
<td>Report writing</td>
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<td>(It is recommended to write the report while the other job progresses)</td>
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5 Applications

We look for students from the IT engineering or computer sciences programs (M.Sc.) with an interest in a future career within IT and telecommunications. The candidate should have genuine interest in developing web applications and be fluent in Swedish and English. Good communication 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 robert.ljunggren@teliacompany.com.