



UZH, Dept. of Informatics, Binzmühlestr. 14, CH-8050 Zürich

Andris Prokofjevs

Prof. Dr. Michael Böhlen
Professor
Phone +41 44 635 43 33
Fax +41 44 635 68 09
boehlen@ifi.uzh.ch

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**Master's Independent Study Module
Datenbanktechnologie**

Topic: Stresstesting a Distributed Communication Platform (Digital Message in a Bottle)

The goal of the "Digital Message in a Bottle" project was to design and bootstrap a decentralized infrastructure for a twitter-like anonymous messaging app in the form of a network of nodes using short-range wireless technologies. It had to be an easy-to-install system that is cheap and can autonomously work for extended periods of time even if there is not always a connection between the nodes in the network.

This independent study is a supplement to the "Digital Message in a Bottle" with an aim of conducting a thorough stresstest to discover potential weaknesses of the system.

The work is structured into the following tasks with corresponding outcomes and deliverables:

- **T1: Summarizing the techniques**

The first task consists of defining the aspects that need to be stresstested. Essentially, this involves scalability in terms of memory, bandwidth, I/O, and computing power (CPU).

Outcome: (part of) a written report summarizing and discussing these aspects of scalability.

- **T2: Designing and developing the stresstest**

Based on the findings of T1, the concrete steps of the stresstest need to be defined and implemented. This may entail some implementations in the system to integrate the stresstest.

Outcome: a fully designed and implemented stresstest



- **T3: Conducting and evaluating the stresstest**

The stresstest that was developed in T2 now needs to be run on the system and the results need to be evaluated and interpreted.

Outcome: (part of) a written report showing the results of the stresstest along with their interpretation

Supervisors: Sven Helmer

Start date: 01.06.2022

End date: 30.11.2022

Department of Informatics, University of Zurich

A handwritten signature in blue ink, consisting of a stylized 'M' followed by a long horizontal stroke.

Prof. Dr. Michael Böhlen