Brno University of Technology - Faculty of Information Technology

Department of Intelligent Systems | Academic year 2017/2018

Bachelor's Thesis Specification

For: **Tamaškovič Marek**
Branch of study: Information Technology
Title: **Automatic Seccomp Syscall Policy Generator**
Category: Algorithms and Data Structures

Instructions for project work:

1. Study the fundamentals of Linux system calls, tools for monitoring syscalls, Berkeley packet filter, and libseccomp. Conduct research on an intermediate representation of syscalls and optimizer of the intermediate representation.
2. Based on the research, design the intermediate representation and provide a design of appropriate optimizer for it.
3. Implement tool which reads output of strace comment and translates it to the intermediate representation. Implement designed optimizer and translator which transforms optimized structure to a seccomp policy.
4. Evaluate implementation of this tool on selected complex programs.

Basic references:

- Paul Moore. Libseccomp. https://github.com/seccomp/libseccomp, 2012. [Online; accessed 2017-11-02]

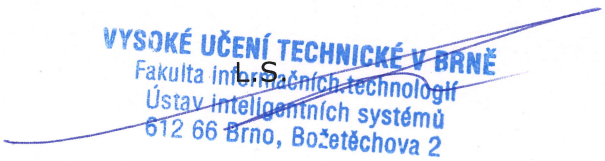
Requirements for the first semester:
Items 1 and 2.

Detailed formal specifications can be found at http://www.fit.vutbr.cz/info/szz/

The Bachelor's Thesis must define its purpose, describe a current state of the art, introduce the theoretical and technical background relevant to the problems solved, and specify what parts have been used from earlier projects or have been taken over from other sources.

Each student will hand-in printed as well as electronic versions of the technical report, an electronic version of the complete program documentation, program source files, and a functional hardware prototype sample if desired. The information in electronic form will be stored on a standard non-rewritable medium (CD-R, DVD-R, etc.) in formats common at the FIT. In order to allow regular handling, the medium will be securely attached to the printed report.

Supervisor: **Turoňová Lenka, Ing.**, DITS FIT BUT
Beginning of work: November 1, 2017
Date of delivery: May 16, 2018



L.S.

Petr Hanáček
Associate Professor and Head of Department