An Architecture for Producing Trustworthy Linux Programs

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Part I

Introduction

1 Research Statement

1.1 The seL4 Microkernel can be leveraged to create trustworthy systems.

1.2 An architecture can be developed to facilitate the creation of trustworthy systems.

2 Motivation

2.1 Trustworthy systems are desirable.

3 Contribution

3.1 I will provide an architecture to facilitate the creation of trustworthy systems.

3.2 Using my architecture, I will generate some non-trivial trustworthy system from simple source files.

4 Overview of Proposal

4.1 I will implement a single trustworthy system.

4.2 I will argue that the systems are trustworthy.

4.3 I will implemented an architecture for generation of trustworthy systems.

4.4 I will re-implement the first system using the architecture.

Part II

Related Work

5 Background Work

5.1 I paved the way for kernel module development as part of the seL4 build-system.

6 Related Work

6.1 Paul Rowe's paper "Confining"

Part III

Methodology

7 Building the Solution

test

test

12.1 I will provide a foundation for trustworthy systems.

12.2 I will implement a trustworthy system on my foundation.

13 Identify What Needs Done

13.1 The architecture must be completed.

13.2 The argument must be completed.

13.3 The architecture must be automated.

14 Outline Research Plan

14.1 I must finish implementing.

14.2 I must read to connect with the literature.

14.3 I must write to explain what I've done.