

# Title

## ABSTRACT

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## 1 INTRODUCTION

## 2 APPROACH

### 2.1 Static analysis

### 2.2 title

## 3 IMPLEMENTATION

### 3.1 Kernel building

Building the Linux kernel 4.16 with LLVM 7.0 because 4.16 is the last Linux kernel which support LLVM 7.0. We use KCOV to collect coverage of each system call, which is the address in binary vmlinux. In order to get more accurate coverage, it could get edge level coverage instead of basic block coverage in LLVM. However, some of the edges may still be not instrumented if such instrumentation is considered redundant. In LLVM, it could use no-prune to disable

pruning. In order to get more accurate mapping between binary address and LLVM bitcode, we generate optimized bitcode and binary, which have almost the same control flow graph. There is only one `__sanitizer_cov_trace_pc` in each basic block, so we can use this to get the basic block level mapping between binary address and LLVM bit code.

### 3.2 static analysis

### 3.3 insert write statement

### 3.4 priority

## 4 EVALUATION

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