LIFILL

Clereco
Cross-Layer Early Reliability Evaluation for the Computing cOntinuum

FP7-CLERECO
Grant Agreement FP7-611404

SEVENTH FRAMEWORK PROGRAMME

A LLVM-based software fault injector

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Product Overview

LIFILL (LIrmm Fault Injection LLVM-based) is able to inject faults in both data and instructions of the LLVM code. The LLVM source code is modified by applying mutations that implement the effect of the fault on the variable or the instructions.

*"We provided you the **passcode** to the **reliability** of any software you develop"*

- LIRMM (CRNS)

Supported Architectures

Any language provided with a LLVM compiler.

Extensions & Tools

- Fully Hardware independent
- Controllability on the fault location and its effects.

Target Components

- Any data (variables, vectors, etc.)
- Any **standard** LLVM instruction.

Supported Fault Models

CLERECO developed Software Fault Models (SFM):

- ✓ **Wrong Data**
- ✓ **Instruction Replacement**

Measurements

- **Masking probability**
- **Fault Silent Violation (FSV)**
- **Crashed**
- **Detected Faults**

System Requirements:

- **OS:** Linux
- **Tools:** clang/llvm
- **RAM:** 4GB

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LIRMM

cnrs dépasser les frontières

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