LLFI Installation Guide

1 LLVM Fault Injector - LLFI

Description :
An LLVM Tool for fault injection, easily map between fault at IR and source level, configurable and extensible.

2 Pre-requisites

1. CMake installed
2. LLVM version 2.9, built with CMake
3. Python
4. Python YAML library installed (PyYAML)
5. llvm-gcc 4.2.1 (frontend for llvm 2.9)
6. Machines with 64/32 bit Linux/OS X.
7. Java

3 Installation

A. Go to http://www.cmake.org/cmake/resources/software.html to download CMake and follow the instructions in the README file of the package downloaded to install.

B. Install llvm-2.9 and llvm-gcc 4.2.1

   1. Go to http://llvm.org/releases/download.html#2.9 to download LLVM source code and LLVM-GCC 4.2 Front End Binaries for your system.
   2. Build llvm-gcc 4.2 for your system. Access http://llvm.org/releases/2.9/docs/GettingStarted.html#installcf for instructions.
   3. Build llvm-2.9 *** WITH CMAKE ***. Access http://llvm.org/docs/CMake.html for instructions.

C. Go to http://www.python.org/getit/ to download Python and follow the instructions in the README file of the package downloaded to install.

D. Go to http://pyyaml.org/wiki/PyYAML to download PyYAML library and follow the instructions in the README file of the package downloaded to install.

E. Build LLFI

1. Extract the code from LLFI archive (/LLFI)
2. Go to /LLFI directory and run './setup –help' to see how to build LLFI to a different directory

F. Set Environment Variables using tcsh shell

1. Set the 'PYTHONPATH' environment variable with the path of the installed Python yaml file directory .
   $ tcsh
   $ setenv PYTHONPATH {**Path of Python yaml file directory**}
2. Create an environment variable "llfibuild" with the path of the llfi build directory.
   $ tcsh
   $ setenv llfibuild {**Path of llfi build directory**}

G. Launch LLFI

1. Go to /LLFI/LLFI-GUI directory and run 'java -jar llfi_gui.jar'.
2. The directory /LLFI/LLFI-GUI will be the project directory.

4 Running LLFI on your target applications

For more details, you can follow the instructions on https://github.com/karthikp-ubc/LLFI-Cisco/wiki.