

liveanalysis user manual

Title	liveanalysis (Liveness analysis pass for Machine-SUIF)
Author	Nikolaos Kavvadias 2004, 2005, 2006, 2007, 2008, 2009 2010, 2011, 2012, 2013, 2014, 2015, 2016
Contact	nikos@nkavvadias.com
Website	http://www.nkavvadias.com
Release Date	01 October 2014
Version	1.0.1
Rev. history	
v1.0.1	2004-10-01 Correct minor documentation issue.
v1.0.0	2004-10-01 Initial release.

1. Introduction

`liveanalysis` is a liveness analysis pass built to be used with the SUIF2/ Mach-SUIF2 compiler infrastructure. This pass generates a textual representation for the liveness information in a given control-flow graph. It reports the live-in and live-out sets, while the kill and gen set can also be reported by setting the `REPORT_KILL_GEN_SET` compile-time switch.

This pass uses the `cfa`, `bvd` and machine libraries of Machine-SUIF. It works for the SUIFvm instruction set as well as other MachSUIF backends. The `liveanalysis` pass has been tested with MachSUIF 2.02.07.15.

2. File listing

The `liveanalysis` distribution includes the following files:

<code>/liveanalysis</code>	Top-level directory
<code>AUTHORS</code>	List of <code>liveanalysis</code> authors.
<code>LICENSE</code>	The modified BSD license governs <code>liveanalysis</code> .
<code>README.rst</code>	This file.
<code>README.html</code>	HTML version of <code>README</code> .
<code>README.pdf</code>	PDF version of <code>README</code> .
<code>VERSION</code>	Current version of the project sources.

liveanalysis.cpp	Implementation of the <code>liveanalysis</code> pass.
liveanalysis.h	C++ header file containing declarations and prototypes for the above.
rst2docs.sh	Bash script for generating the HTML and PDF versions of the documentation (README).
suif_main.cpp	Entry point for building the standalone program <code>do_liveanalysis</code> that implements the pass.
suif_pass.cpp	Define the SUIF pass built as the dynamically loadable library <code>libliveanalysis.so</code> .
suif_main.h	C++ header file for the above.

3. Installation

Unpack the `liveanalysis` archive wherever you like, e.g. in `$MACHSUIFHOME/cfa/liveanalysis`. You don't need to modify anything in the Makefile, if you have a working MachSUIF 2 installation.

The program binary (`do_liveanalysis`) will be installed at `$NCIHOME/bin` and the shared library (`libliveanalysis.so`) at `$NCIHOME/lib`, where NCIHOME is the SUIF 2 top-level directory.

4. Usage details

The pass accepts an input file in CFG form to operate. Textual output is generated, written to stdout by default.

Usage synopsis:

```
$ do_liveanalysis test.cfg
```