bbcount user manual

Title	bbcount (Basic block counter annotation pass for Machine-SUIF)
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v1.0.0	2004-10-02 Initial release.

1. Introduction

`bbcount` is an annotation pass built to be used with the SUIF2/MachSUIF2 compiler infrastructure. This pass creates a basic block annotation (BbNote) that is attached to the first machine instruction of basic block. BbNote information can then be exported to text files for diagnostic and other uses. A BbNote can then be read by subsequent passes.

The BbNote class extends Machine-SUIF class Note and provides the following methods:

```
int get_idnum() const
```

Returns the first member of the note (procedure/CFG identification number).

```
void set_idnum(int idnum)
```

Sets the first member of the note to `idnum`.

```
IdString get_bb_counter() const
```

Returns the basic block counter (second member) as a string.

```
void set_bb_counter(IdString idbb).
```

Sets the basic block counter to the `idbb` string contents.

This pass uses the machine and cfg libraries. What it actually generates are the the values of BbNote annotations in a text file (`bb_counters.txt`). The format of this file is shown below:

```
cnt_exec_freq.<proc_count>.<bb_num>  ;; once for each basic block
...
...
<proc_name> <proc_count> <bb_num-1>  ;; once at the end of a CFG
```

where:

proc_name: is the string representation of the procedure's name

proc_count: the absolute enumeration of the procedure in the translation unit

bb_num: the absolute enumeration of the basic block in the given CFG/procedure.

This pass works for the SUIFvm instruction set as well as other MachSUIF backends. The `bbcount` pass has been tested with MachSUIF 2.02.07.15.

2. File listing

The `bbcount` distribution includes the following files:

/bbcount	Top-level directory
AUTHORS	List of `bbcount` authors.
LICENSE	The modified BSD license governs `bbcount`.
README.rst	This file.
README.html	HTML version of README.
README.pdf	PDF version of README.
VERSION	Current version of the project sources.
bbcount.cpp	Implementation of the `bbcount` pass.
bbcount.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 `do_bbcount` that implements the pass.
suif_pass.cpp	Define the SUIF pass built as the dynamically loadable library `libbbcount.so`.
suif_main.h	C++ header file for the above.
utils.h	C header file with implementations of auxiliary functions.

3. Installation

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

The program binary (`do_bbcount`) will be installed at `$NCIHOME/bin` and the shared library (`libbbcount.so`) at `$NCIHOME/solib`, 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 synopsys: | `$ do_bbcount test.cfg`