

# hifrog - Bug #5105

## inconsistency of HIFROG with CBMC

02/05/2017 17:59 - Sepideh Asadi

<b>Status:</b>	Closed	<b>Start date:</b>	02/05/2017
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Karine Even Mendoza	<b>% Done:</b>	100%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>		<b>Spent time:</b>	0.00 hour
<b>Description</b>			
/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c			
HiFROG --theoref --unwind 10 --bitwidth 32 is UNSAT 6.612			
CBMC is SAT 14.92			

### History

#### #1 - 02/05/2017 20:37 - Karine Even Mendoza

- Status changed from New to In Progress

- Assignee set to Antti Hyvärinen

In master with no-ityp version, I get:

Case 349 : Could not resolve struct

```
member * type: pointer * #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c *
line: 3047 * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog
0: code * return_type: empty * #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 3047 * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog * parameters:
0: parameter * type: pointer * #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 3047 * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog
0: symbol * identifier: tag-virtio_device * #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 3047 * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog *
#source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 3047 * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog * #source_location:
* file: ../../../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 3047 * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog * component_name: del_vqs *
#source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c *
line: 4273 * function: virtblk_remove * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog * #value: 1
0: dereference * type: symbol * identifier: tag-virtio_config_ops * #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 3024 * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog * #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
line: 4273 * function: virtblk_remove * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog *
#value: 1
0: member * type: pointer * #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 3024 * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog
0: symbol * identifier: tag-virtio_config_ops * #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 3024 * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog * component_name:
config * #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 4273 * function: virtblk_remove * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog
* #value: 1
0: dereference * type: symbol * identifier: tag-virtio_device * #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 4250 * function: * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funcrog
* #source_location: * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
```

```

* line: 4273      * function: virtblk_remove      * working_directory:
/home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funfrog      * #lvalue: 1
0: symbol      * type: pointer      * #source_location:      * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 4250      * function:      * working_directory: /home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funfrog
0: symbol      * identifier: tag-virtio_device      * #source_location:      * file:
../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 4250      * function:      * working_directory:
/home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funfrog      * identifier: virtblk_remove::vdev      * #source_location:
* file: ../../../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c
* line: 4273      * function: virtblk_remove      * working_directory:
/home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funfrog      * #lvalue: 1
file ../../../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0_false-unreach-call_drivers-block-virtio_blk-ko--101_1a--39a1d13-1.c line
4273 function virtblk_remove: replacing function pointer by 4 possible targets

```

with valgrind:

```

13095 Process terminating with default action of signal 6 (SIGABRT)
13095 at 0x602DC37: raise (raise.c:56)
13095 by 0x6031027: abort (abort.c:89)
13095 by 0x6026BF5: __assert_fail_base (assert.c:92)
13095 by 0x6026CA1: __assert_fail (assert.c:101)
13095 by 0x5B163D: RegionAllocator<unsigned int>::operator[](unsigned int) (in
/home/karinek/workspace/tools/hifrog_test/hifrog/trunk/cprover/src/funfrog/hifrog)
13095 by 0x4F85625: PtermAllocator::operator[](PTRef) (Pterm.h:346)
13095 by 0x4F857CB: PtStore::operator[](PTRef) (PtStore.h:143)
13095 by 0x4F85816: Logic::getPterm(PTRef) (Logic.h:260)
13095 by 0x50320BC: Logic::mkConst(SRef, char const*) (Logic.C:903)
13095 by 0x502D73F: Logic::Logic(SMTConfig&) (Logic.C:101)
13095 by 0x5053AAB: CUFLogic::CUFLogic(SMTConfig&) (CUFLogic.C:103)
13095 by 0x5056FE0: BVLogic::BVLogic(SMTConfig&, int) (BVLogic.C:86)

```

I guess that there is some mkconst that is been called with 0 instead of '0'

Antti can you please have a look?

## #2 - 27/05/2017 22:41 - Karine Even Mendoza

- Assignee changed from Antti Hyvärinen to Karine Even Mendoza

Seems to work now, but with still the wrong result.  
Need to check the result in prop

## #3 - 30/05/2017 23:36 - Karine Even Mendoza

- Status changed from In Progress to Closed

- % Done changed from 0 to 100

It seems like it checks only the first claim, which is UNSAT, but the second claim is SAT.  
I think we must state the claim number in cuf.

COMPARING MORE CAREFULLY:

1.

output from cbmc:

Post-processing

Solving with MiniSAT 2.2.1 with simplifier

358511 variables, 220874 clauses

SAT checker: instance is SATISFIABLE

Solving with MiniSAT 2.2.1 with simplifier

358511 variables, 602 clauses

SAT checker: instance is SATISFIABLE

Solving with MiniSAT 2.2.1 with simplifier

358511 variables, 0 clauses

SAT checker inconsistent: instance is UNSATISFIABLE

Runtime decision procedure: 0.594s

- Results:

[ ] : SUCCESS

[ldv\_error.assertion.1] : FAILURE

[ldv\_error.assertion.2] : FAILURE

[ldv\_error.assertion.3] : SUCCESS

- 2 of 4 failed (3 iterations)

VERIFICATION FAILED

Which are:

Property ldv\_error.assertion.1:

file ../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0\_false-unreach-call\_drivers-block-virtio\_blk-ko--101\_1a--39a1d13-1.c line 4414 function ldv\_error  
assertion  
FALSE

Property ldv\_error.assertion.2:

file ../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0\_false-unreach-call\_drivers-block-virtio\_blk-ko--101\_1a--39a1d13-1.c line 4414 function ldv\_error  
assertion  
FALSE

Property ldv\_error.assertion.3:

file ../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0\_false-unreach-call\_drivers-block-virtio\_blk-ko--101\_1a--39a1d13-1.c line 4414 function ldv\_error  
assertion  
FALSE

2.

output from Hifrog

Claim 1: UNSAT

VERIFICATION SUCCESSFUL

TOTAL TIME FOR CHECKING THIS CLAIM: 0.386

Checked Assertion:

file ../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0\_false-unreach-call\_drivers-block-virtio\_blk-ko--101\_1a--39a1d13-1.c line 4414 function ldv\_error  
assertion  
FALSE

Claim 2: SAT

(Cannot refine due to 16 unsupported operators;e.g., pointer)

VERIFICATION FAILED

TOTAL TIME FOR CHECKING THIS CLAIM: 46.353

Checked Assertion:

file ../../../../hi-bench/challenge-bench/sv-comp16/c/ldv-commit-tester/m0\_false-unreach-call\_drivers-block-virtio\_blk-ko--101\_1a--39a1d13-1.c line 4414 function ldv\_error  
assertion  
FALSE  
#X: Done.

- In Hifrog there is no claim 3 \*\* - I guess CBMC added auto-asserts in the cbmc version.