

Ruby - Bug #2732

rubyspec: ObjectSpace.define_finalizer doesn't call self-referencing finalizers FAILED

02/11/2010 12:29 AM - mame (Yusuke Endoh)

Status:Closed Priority:Normal Assignee: Target version:2.0.0 ruby -v:ruby 1.9.2dev (2010-02-10 trunk 26632)	Backport:
Description <pre>=begin ##### ##### ##### T_ZOMBIE ##### \$./ruby -ve ' obj = "test" ObjectSpace.define_finalizer(obj, proc { begin; p obj; ensure; p \$!; end }) ' ruby 1.9.2dev (2010-02-10 trunk 26632) [i686-linux] #<NotImplementedError: method `inspect' called on unexpected T_ZOMBIE object (0x8248df0 flags=0x3e klass=0x0)> [ruby-core:23918] obj reference ##### ##### ##### [ruby-core:24095] ##### ##### rubyspec spec ##### ##### ##### unexpected ##### -- Yusuke ENDOH mame@tsg.ne.jp =end</pre>	

History

#1 - 02/11/2010 02:13 PM - nobu (Nobuyoshi Nakada)

- Category set to core
- Priority changed from 3 to 5
- Target version set to 2.0.0
- ruby -v set to ruby 1.9.2dev (2010-02-10 trunk 26632)

```
=begin
=end
```

#2 - 02/11/2010 07:08 PM - mame (Yusuke Endoh)

```
=begin
#####

2010021100:29 Yusuke ENDOH mame@tsg.ne.jp:

##### T_ZOMBIE #####
```

```
$ ./ruby -ve '
obj = "test"
ObjectSpace.define_finalizer(obj, proc { begin; p obj; ensure; p $!; end })
,

ruby 1.9.2dev (2010-02-10 trunk 26632) [i686-linux]
#<NotImplementedError: method `inspect' called on unexpected
T_ZOMBIE object (0x8248df0 flags=0x3e klass=0x0)>
```

T_ZOMBIE
GC

```
ruby rb_objspace_call_finalizer
/* run finalizers */ chain_finalized_object
run_final
```

```
chain_finalized_object FL_FINALIZE
T_ZOMBIE dfree 0 run_final
T_ZOMBIE finalizer
( )
```

() 2

1. dfree 0 free
(MVM)
2. T_ZOMBIE finalizer
T_ZOMBIE finalizer

GC

--
Yusuke ENDOH mame@tsg.ne.jp
=end

#3 - 02/12/2010 10:32 PM - mame (Yusuke Endoh)

```
=begin

```

2010 2 11 19:08 Yusuke ENDOH mame@tsg.ne.jp:

```
T_ZOMBIE
snip
GC
```

wanabe

```
r18398 runs finalizers with the object terminated.
revert
T_ZOMBIE
```

```
$ ./ruby -e '
obj = "test"
ObjectSpace.define_finalizer(obj, proc { begin; p obj; ensure; p $!; end })
,
```

make check objectspace 1

2

- 1.

```
$ ./ruby -e '
def foo; proc { p :foo }; end
s = "foo"
ObjectSpace.define_finalizer(s, foo)
'
```

ObjectSpace.define_finalizer(s, foo)

```
$ ./ruby -e '
def foo; proc { p :foo }; end
ObjectSpace.define_finalizer("foo", foo)
':foo
```

ObjectSpace.define_finalizer("foo", foo)

```
$ ./ruby -e '
class C
def self.foo; proc { p :foo }; end
s = "foo"
ObjectSpace.define_finalizer("foo", foo)
end
'
```

ObjectSpace.define_finalizer("foo", foo)

1. Enumerator#next

ObjectSpace.define_finalizer("foo", callback)

```
$ ./ruby -e '
module M
def self.callback
proc { p "finalized" }
end
def self.run
@enum = 1.enum_for(:upto, 3)
@enum.next
ObjectSpace.define_finalizer("foo", callback)
end
end
M.run
'
```

next

```
$ ./ruby -e '
module M
def self.callback
proc { p "finalized" }
end
def self.run
@enum = 1.enum_for(:upto, 3)
#@enum.next
ObjectSpace.define_finalizer("foo", callback)
end
end
M.run
"finalized"
```

Enumerator

```
$ ./ruby -e '
module M
def self.callback
proc { p "finalized" }
end
```

```

def self.run
  enum = 1.enum_for(:upto, 3)
  enum.next
  ObjectSpace.define_finalizer("foo", callback)
end
end
M.run
'
"finalized"

```

```

##### Fiber #####
#####
rubyspec ##### (Enumerator [] spec []
#####) []

```

```

##### T_ZOMBIE #####
#####

```

```

diff --git a/gc.c b/gc.c
index 4cfc23c..32b7436 100644
--- a/gc.c
+++ b/gc.c
@@ -2652,7 +2652,7 @@ static int
chain_finalized_object(st_data_t key, st_data_t val, st_data_t arg)
{
  RVALUE *p = (RVALUE *)key, **final_list = (RVALUE **)arg;

```

- if (p->as.basic.flags & FL_FINALIZE) {
- if ((p->as.basic.flags & (FL_FINALIZE|FL_MARK)) == FL_FINALIZE) {
 - if (BUILTIN_TYPE(p) != T_ZOMBIE) {
 - p->as.free.flags = FL_MARK | T_ZOMBIE; /* remain marked */
 - RDATA(p)->dfree = 0;
 - @@ -2661,9 +2661,7 @@ chain_finalized_object(st_data_t key, st_data_t
 - val, st_data_t arg)
 - *final_list = p;
 - return ST_CONTINUE;
- else {
- return ST_DELETE;
- }
- return ST_DELETE;
- }

```

void
@@ -2681,15 +2679,16 @@ rb_objspace_call_finalizer(rb_objspace_t *objspace)

```

```

/* run finalizers */
if (finalizer_table) {

```

- finalize_deferred(objspace);
- while (finalizer_table->num_entries > 0) {
- do {
- [REDACTED]
- [REDACTED]
- st_foreach(finalizer_table, chain_finalized_object,
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

- [REDACTED]

- } while (deferred_final_list);
- if (finalizer_table->num_entries) {

- [REDACTED]

- [REDACTED]

- [REDACTED]

```
}
st_free_table(finalizer_table);
finalizer_table = 0;
```

--

Yusuke ENDOH mame@tsg.ne.jp

=end

#4 - 02/13/2010 10:32 AM - mame (Yusuke Endoh)

=begin
[REDACTED]

2010[REDACTED]2[REDACTED]12[REDACTED]22:32 Yusuke ENDOH mame@tsg.ne.jp:

2010[REDACTED]2[REDACTED]11[REDACTED]19:08 Yusuke ENDOH mame@tsg.ne.jp:

```
[REDACTED] T_ZOMBIE [REDACTED]
snip
[REDACTED] T_ZOMBIE [REDACTED]
[REDACTED]
```

[REDACTED]

[REDACTED] Enumerator#next [REDACTED] Tempfile [REDACTED]
Tempfile [REDACTED]

```
require "tempfile"
e = 1.enum_for(:upto, 3)
e.next
t = Tempfile.new("foo")
p t.path
```

[REDACTED]
conservative GC [REDACTED]
[REDACTED]self-referencial [REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]make check [REDACTED] make test-rubyspec [REDACTED]
[REDACTED]

[REDACTED]rubyspec [REDACTED]

```
diff --git a/gc.c b/gc.c
index 4cfc23c..759b14e 100644
--- a/gc.c
+++ b/gc.c
@@ -2588,11 +2588,29 @@ run_single_final(VALUE arg)
}
```

```
static void
-run_final(rb_objspace_t *objspace, VALUE obj)
+run_finalizer(rb_objspace_t *objspace, VALUE obj, VALUE objid, VALUE table)
{
long i;
int status;
```

- VALUE args[3], table, objid;
- VALUE args[3];
- args[1] = 0;
- args[2] = (VALUE)rb_safe_level();
- if (!args[1] && RARRAY_LEN(table) > 0) {

- [REDACTED]
- }
- for (i=0; i<RARRAY_LEN(table); i++) {

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- }
- +}

```
+static void
+run_final(rb_objspace_t *objspace, VALUE obj)
+{
    VALUE table, objid;
    RUBY_DATA_FUNC free_func = 0;

    objid = rb_obj_id(obj); /* make obj into id */
    @@ -2610,17 +2628,7 @@ run_final(rb_objspace_t *objspace, VALUE obj)

    if (finalizer_table &&
        st_delete(finalizer_table, (st_data_t*)&obj, &table)) {
```

- args[1] = 0;
- args[2] = (VALUE)rb_safe_level();
- if (!args[1] && RARRAY_LEN(table) > 0) {

- [REDACTED]
- }
- for (i=0; i<RARRAY_LEN(table); i++) {

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- }
- run_finalizer(objspace, obj, objid, table);
- }
- }

```
@@ -2652,18 +2660,33 @@ static int
chain_finalized_object(st_data_t key, st_data_t val, st_data_t arg)
{
    RVALUE *p = (RVALUE *)key, **final_list = (RVALUE **)arg;
```

- if (p->as.basic.flags & FL_FINALIZE) {
- if ((p->as.basic.flags & (FL_FINALIZE|FL_MARK)) == FL_FINALIZE) {
- if (BUILTIN_TYPE(p) != T_ZOMBIE) {

[illegible]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

```
}
st_free_table(finalizer_table);
finalizer_table = 0;
```

```
--
Yusuke ENDOH mame@tsg.ne.jp
```

```
=end
```

#5 - 02/13/2010 11:19 AM - mame (Yusuke Endoh)

```
=begin
[REDACTED]
```

2010年2月13日 10:40 Tanaka Akira akr@fsij.org:

2010年2月13日 10:31 Yusuke ENDOH mame@tsg.ne.jp:

```
[REDACTED]
conservative GC [REDACTED]
[REDACTED]self-referencial [REDACTED]
[REDACTED]
[REDACTED]
```

```
[REDACTED] 1.8 [REDACTED] tempfile.rb [REDACTED]
Proc [REDACTED]
[REDACTED]
[REDACTED]
```

[\[ruby-dev:40409\]](#) [REDACTED] + [REDACTED] Tempfile::Remover [REDACTED]
[REDACTED] mark [REDACTED]
[REDACTED]

```
--
Yusuke ENDOH mame@tsg.ne.jp
```

```
=end
```

#6 - 02/16/2010 08:40 PM - mame (Yusuke Endoh)

```
=begin
[REDACTED]
```

2010年2月16日 11:25 KOSAKI Motohiro kosaki.motohiro@jp.fujitsu.com:

```
[REDACTED]IRC[REDACTED]

1. object[REDACTED]reference[REDACTED]
2. finalizer[REDACTED]object[REDACTED]
3. [REDACTED]finalizer[REDACTED]

[REDACTED]1,2,3[REDACTED]
```

```
[REDACTED]
```

```
[REDACTED]
```

```
A) [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []  
[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []  
B) [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []  
\[ruby-dev.40410\][] [] [] tempfile[] [] [] [] [] []  
  
[] [] [] [] [] [] [] [] [] []
```

- ```
00000000000000000000000000000000 object 0
000
000000
```

```

000000000000 [ruby-dev:40410] 0000000000000000
00000000000000000000000000000000

```

--  
Yusuke ENDOH [mame@tsg.ne.jp](mailto:mame@tsg.ne.jp)

```
=end
```

#7 - 02/16/2010 09:37 PM - mame (Yusuke Endoh)

- Status changed from Open to Closed

- % Done changed from 0 to 100

=begin

This issue was solved with changeset r26684.  
Yusuke, thank you for reporting this issue.  
Your contribution to Ruby is greatly appreciated.  
May Ruby be with you.

```
=end
```