

Ruby trunk - Bug #11360

Singleton class doesn't appear by ObjectSpace.each_object

07/17/2015 05:20 AM - ko1 (Koichi Sasada)

Status: Closed	
Priority: Normal	
Assignee: ko1 (Koichi Sasada)	
Target version:	
ruby -v: 2.3dev	Backport: 2.0.0: UNKNOWN, 2.1: UNKNOWN, 2.2: UNKNOWN

Description

Singleton class doesn't appear by ObjectSpace.each_object.

The following is reproducible code.

```
class C
  class << self
    p [self, self.class]
    $c = self
  end
end

ObjectSpace.each_object(Class) { |o|
  exit if $c == o
}
raise "#{$c} is not found!"
```

This is because internal_object_p in gc.c skips singleton classes.

```
static int
internal_object_p(VALUE obj)
{
  RVALUE *p = (RVALUE *)obj;

  if (p->as.basic.flags) {
    switch (BUILTIN_TYPE(p)) {
      case T_NONE:
      case T_IMEMO:
      case T_ICLASS:
      case T_NODE:
      case T_ZOMBIE:
        break;
      case T_CLASS:
        if (FL_TEST(p, FL_SINGLETON))
          break;
      default:
        if (!p->as.basic.klass) break;
        return 0;
    }
  }
  return 1;
}
```

Associated revisions

Revision 46215c1e - 07/21/2015 07:04 PM - ko1 (Koichi Sasada)

- gc.c (internal_object_p): Now a singleton classes appear by ObjectSpace.each_object. [Bug #11360]
- test/ruby/test_objectspace.rb: add a test about it.

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@51320 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

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History

#1 - 07/17/2015 05:45 AM - ko1 (Koichi Sasada)

From Ruby 1.6, singleton classes are not appeared.
Is it intentional?

#2 - 07/17/2015 09:43 AM - Eregon (Benoit Daloze)

Koichi Sasada wrote:

From Ruby 1.6, singleton classes are not appeared.
Is it intentional?

I guess the reason is exposing the last layer of singleton classes would expose "VM-internal singleton classes/metaclasses".

The documentation of `rb_singleton_class` explains it a bit.

But basically the VM needs the metaclass of any class exposed to the user, and exposing them would require another layer, which if exposed as well would need another, etc.

Singleton classes which already have a metaclass could be iterated though.

#3 - 07/21/2015 03:04 PM - matz (Yukihiro Matsumoto)

It was intentional, since in the old days singleton classes are merely internal data structure. After introduction of `#singleton_class` method, singleton classes are objects visible to Ruby world. In that sense, now it's natural for them to be visible from `#each_object`.

Matz.

#4 - 07/21/2015 07:05 PM - ko1 (Koichi Sasada)

- Status changed from Open to Closed

Applied in changeset r51320.

- gc.c (internal_object_p): Now a singleton classes appear by ObjectSpace.each_object. [Bug [#11360](#)]
- test/ruby/test_objectspace.rb: add a test about it.