

Ruby - Feature #10227

array.include? is much slower than array.index

09/11/2014 06:31 AM - Darudmand (A N)

Status:	Closed
Priority:	Normal
Assignee:	Glass_saga (Masaki Matsushita)
Target version:	2.2.0

Description

I benchmarked both, and found that include? is about ten times slower than index (for the test below).

```
require 'benchmark'
```

```
a = (1..1_000_000).to_a
```

```
num = 100_000
```

```
reps = 100
```

```
Benchmark.bmbm do |bm|
```

```
  bm.report('include?') do
```

```
    reps.times { a.include? num }
```

```
  end
```

```
  bm.report('index') do
```

```
    reps.times { a.index num }
```

```
  end
```

```
end
```

	user	system	total	real
include?	0.330000	0.000000	0.330000 (	0.334328)
index	0.040000	0.000000	0.040000 (	0.039812)

As per bug [#8820](#), index has been optimised to use rb_equal_opt [1], whereas includes? uses rb_equal [2]. (Changelog here [3].)

[1] <https://github.com/ruby/ruby/blob/c6da45b74cf9d420803c6ccbf4d527b1dfe4014e/array.c#L1462>

[2] <https://github.com/ruby/ruby/blob/c6da45b74cf9d420803c6ccbf4d527b1dfe4014e/array.c#L3851>

[3] <http://svn.ruby-lang.org/cgi-bin/viewvc.cgi?revision=42704&view=revision>

Associated revisions

Revision e539565d9a69d9a355e747d016228926467348ab - 09/21/2014 02:23 AM - Glass_saga (Masaki Matsushita)

- array.c: use rb_equal_opt() for performance improvement.
[ruby-core:64954] [Feature #10227]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@47659 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision e539565d - 09/21/2014 02:23 AM - Glass_saga (Masaki Matsushita)

- array.c: use rb_equal_opt() for performance improvement.
[ruby-core:64954] [Feature #10227]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@47659 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

History

#1 - 09/21/2014 02:08 AM - Glass_saga (Masaki Matsushita)

- Assignee set to Glass_saga (Masaki Matsushita)

- Tracker changed from Bug to Feature

- Status changed from Open to Assigned

#2 - 09/21/2014 02:23 AM - Anonymous

- Status changed from Assigned to Closed

- % Done changed from 0 to 100

Applied in changeset r47659.

- array.c: use rb_equal_opt() for performance improvement.
[\[ruby-core:64954\]](#) [Feature [#10227](#)]

#3 - 09/21/2014 02:26 AM - Glass_saga (Masaki Matsushita)

Result of benchmark script the same as ruby-core:64954.

Rehearsal	-----			
include?	0.100000	0.000000	0.100000 (0.093951)	
index	0.090000	0.000000	0.090000 (0.092334)	
-----			total:	0.190000sec

	user	system	total	real
include?	0.090000	0.000000	0.090000 (0.081303)	
index	0.080000	0.000000	0.080000 (0.081296)	