Ruby - Bug #19970

Eval leaks callcache and callinfo objects on arm32 (linux)

10/24/2023 12:56 PM - larsin (Lars Ingjer)

Status:	Open		
Priority:	Normal		
Assignee:			
Target version:			
ruby -v:	ruby 3.2.2 (2023-03-30 revision e51014f9c0) [armv7l-linux-eabihf]	**Backport:**	3.0: UNKNOWN, 3.1: UNKNOWN, 3.2: UNKNOWN

Description

The following script demonstrates a memory leak on arm 32 (linux):

```
def gcdiff(n)
  GC.start
  if @last_gc_stat
    puts "GC.stat #{n} diff old_objects: #{GC.stat(:old_objects) - @last_gc_stat}"
  end

  @last_gc_stat = GC.stat(:old_objects)
end

def foo
end

10.times do |i|
  10_000.times do
    eval 'foo'
  end

  gcdiff(i)
  puts "Number of live objects: #{GC.stat(:heap_live_slots)}"
  puts "Memory usage: #{`ps -o rss= -p #{$$}`}"
  puts
end
```

Output:

```
Number of live objects: 41303
Memory usage: 11900

GC.stat 1 diff old_objects: 20037
Number of live objects: 61317
Memory usage: 13604

GC.stat 2 diff old_objects: 20001
Number of live objects: 81317
Memory usage: 14880

GC.stat 3 diff old_objects: 20000
Number of live objects: 101317
Memory usage: 16596

GC.stat 4 diff old_objects: 20000
Number of live objects: 121317
Memory usage: 17248

GC.stat 5 diff old_objects: 20000
Number of live objects: 141317
Memory usage: 18760

GC.stat 6 diff old_objects: 20000
```

```
Number of live objects: 161317
Memory usage: 19540

GC.stat 7 diff old_objects: 20000
Number of live objects: 181317
Memory usage: 21752

GC.stat 8 diff old_objects: 20000
Number of live objects: 201317
Memory usage: 21828

GC.stat 9 diff old_objects: 20000
Number of live objects: 221317
Memory usage: 24896
```

ObjectSpace.count_imemo_objects shows that imemo_callcache and imemo_callinfo are leaking.

The issue does not occur on arm64 mac or x86_64 linux with the same ruby version.
The issue has also been reproduced with the latest 3.2.2 snapshot (2023-09-30).

Related issues:	
Related to Ruby - Bug #19907: Method calls with keyword arguments in eval lea...	**Closed**

History

#1 - 10/25/2023 05:36 AM - larsin (Lars Ingjer)

The issue has also been reproduced on master (ruby 3.3.0dev (2023-10-24 master 60196b4780) [armv7l-linux-eabihf]).

#2 - 02/12/2024 03:29 AM - jhawthorn (John Hawthorn)

I suspect this is the same underlying issue as #19907, but on wider platforms it only occurs with kwargs.

#3 - 02/12/2024 03:29 AM - jhawthorn (John Hawthorn)

- Related to Bug #19907: Method calls with keyword arguments in eval leaks callcache and callinfo objects added