

Ruby - Bug #9932

Permutation - Segment fault

06/11/2014 11:12 AM - tak2siva (siva kumar)

Status:	Closed	
Priority:	Normal	
Assignee:		
Target version:	2.2.0	
ruby -v:	1.9.3p545	
Backport:		2.0.0: UNKNOWN, 2.1: UNKNOWN

Description

Execute the following program with the inputs

```
#####
# hash.rb

t = gets.chomp.to_i

def hash str
  res = str.count "A"
  if str.size > 1
    s1 = str[0..(str.size/2 - 1)]
    s2 = str[(str.size/2)..-1]
    #p "#{s1}, #{str}"
    res += [hash(s1), hash(s2)].max
  end

  res
end

#puts hash("AAEAAE")

t.times do |x|
  a = gets.chomp.to_i
  e = gets.chomp.to_i
  v = gets.chomp.to_i

  pos = ("A"*a + "E"*e).split('').permutation.map(&:join).uniq

  r = 0

  pos.each do |y|
    r += 1 if(hash(y)==v)
  end

  puts (r % 1000000007)
end

#####

$ ruby hash.rb
$ 1
$ 234234
$ 224
$ 754674567
```

Then the follwing error is produced

```
[siva@siva chef]$ ruby hash.rb
1
234234
224
754674567
```

```

hash.rb:22: [BUG] Segmentation fault
ruby 1.9.3p545 (2014-02-24 revision 45159) [x86_64-linux]

-- Control frame information -----
c:0009 p:---- s:0027 b:0027 l:000026 d:000026 CFUNC :permutation
c:0008 p:---- s:0025 b:0025 l:000024 d:000024 CFUNC :each
c:0007 p:---- s:0023 b:0023 l:000022 d:000022 CFUNC :map
c:0006 p:0114 s:0020 b:0020 l:0007f8 d:000019 BLOCK hash.rb:22
c:0005 p:---- s:0012 b:0012 l:000011 d:000011 FINISH
c:0004 p:---- s:0010 b:0010 l:000009 d:000009 CFUNC :times
c:0003 p:0052 s:0007 b:0007 l:0007f8 d:0014b0 EVAL hash.rb:17
c:0002 p:---- s:0004 b:0004 l:000003 d:000003 FINISH
c:0001 p:0000 s:0002 b:0002 l:0007f8 d:0007f8 TOP

-- Ruby level backtrace information -----
hash.rb:17:in `<main>'
hash.rb:17:in `times'
hash.rb:22:in `block in <main>'
hash.rb:22:in `map'
hash.rb:22:in `each'
hash.rb:22:in `permutation'

-- C level backtrace information -----
/usr/local/rvm/rubies/ruby-1.9.3-p545/lib/libruby.so.1.9(+0x17dc97) [0x7f2796e84c97] vm_dump.c:796
/usr/local/rvm/rubies/ruby-1.9.3-p545/lib/libruby.so.1.9(+0x5eda4) [0x7f2796d65da4] error.c:258
/usr/local/rvm/rubies/ruby-1.9.3-p545/lib/libruby.so.1.9(rb_bug+0xb8) [0x7f2796d65f48] error.c:277
/usr/local/rvm/rubies/ruby-1.9.3-p545/lib/libruby.so.1.9(+0x10cb4d) [0x7f2796e13b4d] signal.c:644
/lib64/libpthread.so.0() [0x3f4980f710]
/usr/local/rvm/rubies/ruby-1.9.3-p545/lib/libruby.so.1.9(+0x2ec40) [0x7f2796d35c40] array.c:4102
/usr/local/rvm/rubies/ruby-1.9.3-p545/lib/libruby.so.1.9(+0x2eca7) [0x7f2796d35ca7] array.c:4107
(snip same 1017 lines)

-- Other runtime information -----

* Loaded script: hash.rb

* Loaded features:

 0 enumerator.so
 1 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/1.9.1/x86_64-linux/enc/encdb.so
 2 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/1.9.1/x86_64-linux/enc/trans/transdb.so
 3 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/1.9.1/x86_64-linux/rbconfig.rb
 4 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/compatibility.rb
 5 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/defaults.rb
 6 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/deprecate.rb
 7 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/errors.rb
 8 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/version.rb
 9 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/requirement.rb
10 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/platform.rb
11 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/basic_specification.
rb
12 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/stub_specification.r
b
13 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/util/stringio.rb
14 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/specification.rb
15 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/exceptions.rb
16 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/core_ext/kernel_gem.
rb
17 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/1.9.1/thread.rb
18 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/1.9.1/monitor.rb
19 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems/core_ext/kernel_requ
ire.rb
20 /usr/local/rvm/rubies/ruby-1.9.3-p545/lib/ruby/site_ruby/1.9.1/rubygems.rb

* Process memory map:

00400000-00401000 r-xp 00000000 08:02 4497252 /usr/local/rvm/rubies/rub

```

```

y-1.9.3-p545/bin/ruby
00600000-00601000 rw-p 00000000 08:02 4497252 /usr/local/rvm/rubies/rub
y-1.9.3-p545/bin/ruby
011e3000-01f8e000 rw-p 00000000 00:00 0 [heap]
3f48c0000-3f48c20000 r-xp 00000000 08:02 524316 /lib64/ld-2.12.so
3f48e1f000-3f48e20000 r--p 0001f000 08:02 524316 /lib64/ld-2.12.so
3f48e20000-3f48e21000 rw-p 00020000 08:02 524316 /lib64/ld-2.12.so
3f48e21000-3f48e22000 rw-p 00000000 00:00 0
3f49400000-3f4958b000 r-xp 00000000 08:02 524318 /lib64/libc-2.12.so
3f4958b000-3f4978a000 ---p 0018b000 08:02 524318 /lib64/libc-2.12.so
3f4978a000-3f4978e000 r--p 0018a000 08:02 524318 /lib64/libc-2.12.so
3f4978e000-3f4978f000 rw-p 0018e000 08:02 524318 /lib64/libc-2.12.so
3f4978f000-3f49794000 rw-p 00000000 00:00 0
3f49800000-3f49817000 r-xp 00000000 08:02 524340 /lib64/libpthread-2.12.so
3f49817000-3f49a17000 ---p 00017000 08:02 524340 /lib64/libpthread-2.12.so
3f49a17000-3f49a18000 r--p 00017000 08:02 524340 /lib64/libpthread-2.12.so
3f49a18000-3f49a19000 rw-p 00018000 08:02 524340 /lib64/libpthread-2.12.so
3f49a19000-3f49a1d000 rw-p 00000000 00:00 0
3f49c00000-3f49c02000 r-xp 00000000 08:02 524450 /lib64/libdl-2.12.so
3f49c02000-3f49e02000 ---p 00002000 08:02 524450 /lib64/libdl-2.12.so
3f49e02000-3f49e03000 r--p 00002000 08:02 524450 /lib64/libdl-2.12.so
3f49e03000-3f49e04000 rw-p 00003000 08:02 524450 /lib64/libdl-2.12.so
3f4a000000-3f4a083000 r-xp 00000000 08:02 524681 /lib64/libm-2.12.so
3f4a083000-3f4a282000 ---p 00083000 08:02 524681 /lib64/libm-2.12.so
3f4a282000-3f4a283000 r--p 00082000 08:02 524681 /lib64/libm-2.12.so
3f4a283000-3f4a284000 rw-p 00083000 08:02 524681 /lib64/libm-2.12.so
3f4a400000-3f4a407000 r-xp 00000000 08:02 524372 /lib64/librt-2.12.so
3f4a407000-3f4a606000 ---p 00007000 08:02 524372 /lib64/librt-2.12.so
3f4a606000-3f4a607000 r--p 00006000 08:02 524372 /lib64/librt-2.12.so
3f4a607000-3f4a608000 rw-p 00007000 08:02 524372 /lib64/librt-2.12.so
3f4cc00000-3f4cc16000 r-xp 00000000 08:02 525285 /lib64/libgcc_s-4.4.7-201
20601.so.1
3f4cc16000-3f4ce15000 ---p 00016000 08:02 525285 /lib64/libgcc_s-4.4.7-201
20601.so.1
3f4ce15000-3f4ce16000 rw-p 00015000 08:02 525285 /lib64/libgcc_s-4.4.7-201
20601.so.1
3f56c00000-3f56c71000 r-xp 00000000 08:02 524481 /lib64/libfreebl3.so
3f56c71000-3f56e70000 ---p 00071000 08:02 524481 /lib64/libfreebl3.so
3f56e70000-3f56e72000 r--p 00070000 08:02 524481 /lib64/libfreebl3.so
3f56e72000-3f56e73000 rw-p 00072000 08:02 524481 /lib64/libfreebl3.so
3f56e73000-3f56e77000 rw-p 00000000 00:00 0
3f57600000-3f57607000 r-xp 00000000 08:02 524483 /lib64/libcrypt-2.12.so
3f57607000-3f57807000 ---p 00007000 08:02 524483 /lib64/libcrypt-2.12.so
3f57807000-3f57808000 r--p 00007000 08:02 524483 /lib64/libcrypt-2.12.so
3f57808000-3f57809000 rw-p 00008000 08:02 524483 /lib64/libcrypt-2.12.so
3f57809000-3f57837000 rw-p 00000000 00:00 0
7f27904ad000-7f2790678000 rw-p 00000000 00:00 0
7f2790678000-7f2790870000 rw-p 00000000 00:00 0
7f27908ce000-7f2790908000 rw-p 00000000 00:00 0
7f2790942000-7f2790944000 r-xp 00000000 08:02 5642115 /usr/local/rvm/rubies/rub
y-1.9.3-p545/lib/ruby/1.9.1/x86_64-linux/enc/trans/transdb.so
7f2790944000-7f2790b44000 ---p 00002000 08:02 5642115 /usr/local/rvm/rubies/rub
y-1.9.3-p545/lib/ruby/1.9.1/x86_64-linux/enc/trans/transdb.so
7f2790b44000-7f2790b45000 rw-p 00002000 08:02 5642115 /usr/local/rvm/rubies/rub
y-1.9.3-p545/lib/ruby/1.9.1/x86_64-linux/enc/trans/transdb.so
7f2790b45000-7f2790b47000 r-xp 00000000 08:02 5642141 /usr/local/rvm/rubies/rub
y-1.9.3-p545/lib/ruby/1.9.1/x86_64-linux/enc/encdb.so
7f2790b47000-7f2790d46000 ---p 00002000 08:02 5642141 /usr/local/rvm/rubies/rub
y-1.9.3-p545/lib/ruby/1.9.1/x86_64-linux/enc/encdb.so
7f2790d46000-7f2790d47000 rw-p 00001000 08:02 5642141 /usr/local/rvm/rubies/rub
y-1.9.3-p545/lib/ruby/1.9.1/x86_64-linux/enc/encdb.so
7f2790d47000-7f2790d48000 ---p 00000000 00:00 0
7f2790d48000-7f2790e4c000 rw-p 00000000 00:00 0
7f2790e4c000-7f2796cdd000 r--p 00000000 08:02 4492532 /usr/lib/locale/locale-ar
chive
7f2796cdd000-7f2796ce3000 rw-p 00000000 00:00 0
7f2796d07000-7f2796f21000 r-xp 00000000 08:02 4497254 /usr/local/rvm/rubies/rub

```

```

y-1.9.3-p545/lib/libruby.so.1.9.1
7f2796f21000-7f2797120000 ---p 0021a000 08:02 4497254 /usr/local/rvm/rubies/rub
y-1.9.3-p545/lib/libruby.so.1.9.1
7f2797120000-7f2797128000 rw-p 00219000 08:02 4497254 /usr/local/rvm/rubies/rub
y-1.9.3-p545/lib/libruby.so.1.9.1
7f2797128000-7f2797145000 rw-p 00000000 00:00 0
7fff2a3a4000-7fff2afa3000 rw-p 00000000 00:00 0 [stack]
7fff2afb5000-7fff2afb6000 r-xp 00000000 00:00 0 [vdso]
fffffffffff600000-fffffffffff601000 r-xp 00000000 00:00 0 [vsyscall]

```

[NOTE]

You may have encountered a bug in the Ruby interpreter or extension libraries.

Bug reports are welcome.

For details: <http://www.ruby-lang.org/bugreport.html>

Aborted (core dumped)

Associated revisions

Revision 9d6b7aede9c20ff46290d9d08027dc8a025f0e78 - 06/14/2014 01:54 AM - nobu (Nobuyoshi Nakada)

array.c: non-recursive permute0

- array.c (permute0): remove recursion, by looping with indexes stored in p. [ruby-core:63103] [Bug #9932]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@46426 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 9d6b7aed - 06/14/2014 01:54 AM - nobu (Nobuyoshi Nakada)

array.c: non-recursive permute0

- array.c (permute0): remove recursion, by looping with indexes stored in p. [ruby-core:63103] [Bug #9932]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@46426 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

History

#1 - 06/11/2014 12:29 PM - nobu (Nobuyoshi Nakada)

- Description updated

- Assignee deleted (wanabe (_ wanabe))

- Priority changed from 5 to 3

It's a stack overflow, and it results SystemStackError as expected on recent 2.0.0 or later.

#2 - 06/11/2014 02:31 PM - calamitas (Peter Vanbroekhoven)

On Wed, Jun 11, 2014 at 1:12 PM, tak2siva@gmail.com wrote:

Execute the following program with the inputs

```

#####
# hash.rb

t = gets.chomp.to_i

def hash str
  res = str.count "A"
  if str.size > 1
    s1 = str[0..(str.size/2 - 1)]
    s2 = str[(str.size/2)..-1]
    #p "#{s1}, #{s2}"
    res += [hash(s1), hash(s2)].max
  end

  res
end

#puts hash("AAEAEE")

```

```

t.times do |x|
  a = gets.chomp.to_i
  e = gets.chomp.to_i
  v = gets.chomp.to_i

  pos = ("A"*a + "E"*e).split('').permutation.map(&:join).uniq

  r = 0

  pos.each do |y|
    r += 1 if (hash(y) == v)
  end

  puts (r % 1000000007)
end

#####

$ ruby hash.rb
$ 1
$ 234234
$ 224
$ 754674567

```

Then the following error is produced

This looks a lot like a solution to a programming contest problem. Can you provide a link to the problem statement?

The number of permutations you are asking for is humongous: $(234234 + 224)!$ which, if my calculations are right, is between $10^{1157233}$ and $10^{1157234}$. There won't be a computer that can calculate and store that many permutations for a long time (if ever).

Peter

#3 - 06/14/2014 01:54 AM - nobu (Nobuyoshi Nakada)

- Status changed from Open to Closed

- % Done changed from 0 to 100

Applied in changeset r46426.

array.c: non-recursive permute0

- array.c (permute0): remove recursion, by looping with indexes stored in p. [\[ruby-core:63103\]](#) [Bug [#9932](#)]