

Ruby master - Bug #11030

Ruby 2.2.1 fails to compile with hardened GCC

04/03/2015 09:57 AM - mva (Vadim A. Misbakh-Soloviov)

Status: Closed	
Priority: Normal	
Assignee:	
Target version:	
ruby -v: 2.2.1	Backport: 2.0.0: UNKNOWN, 2.1: DONE, 2.2: DONE
Description Hi there! I've discovered, that Ruby 2.2.1 can't be built using Hardened GCC (4.8 and 4.9). Probably, that was introduced in that commit: http://svn.ruby-lang.org/cgi-bin/viewvc.cgi/tags/v2_2_1/thread_pthread.c?r1=48992&r2=49578&diff_format=h Additional info and build logs can be found on downstream bug tracker: https://bugs.gentoo.org/show_bug.cgi?id=542610 (unfortunately, ruby maintainers in downstream are slackers, so I going to report that to upstream myself).	
Related issues: Related to Ruby master - Bug #11001: 2.2.1 Segmentation fault in reserve_stac... Closed	

Associated revisions

Revision 78c75612 - 04/14/2015 10:34 PM - nobu (Nobuyoshi Nakada)

thread_pthread.c: keep sp safe zone

- thread_pthread.c (reserve_stack): keep sp safe zone to get rid of crash by -fstack-check. [ruby-core:68740] [Bug #11030]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@50316 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 50316 - 04/14/2015 10:34 PM - nobu (Nobuyoshi Nakada)

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Revision 513b313d - 04/28/2015 05:14 AM - usa (Usaku NAKAMURA)

merge revision(s) 50316: [Backport #11030]

```
* thread_pthread.c (reserve_stack): keep sp safe zone to get rid
of crash by -fstack-check. [ruby-core:68740] [Bug #11030]
```

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_1@50396 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 50396 - 04/28/2015 05:14 AM - usa (Usaku NAKAMURA)

merge revision(s) 50316: [Backport #11030]

```
* thread_pthread.c (reserve_stack): keep sp safe zone to get rid
  of crash by -fstack-check. [ruby-core:68740] [Bug #11030]
```

Revision 0224bb03 - 05/13/2015 03:28 PM - nagachika (Tomoyuki Chikanaga)

merge revision(s) 50316: [Backport #11030]

```
* thread_pthread.c (reserve_stack): keep sp safe zone to get rid
  of crash by -fstack-check. [ruby-core:68740] [Bug #11030]
```

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_2@50484 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 50484 - 05/13/2015 03:28 PM - nagachika (Tomoyuki Chikanaga)

merge revision(s) 50316: [Backport #11030]

```
* thread_pthread.c (reserve_stack): keep sp safe zone to get rid
  of crash by -fstack-check. [ruby-core:68740] [Bug #11030]
```

History

#1 - 04/03/2015 11:15 AM - nobu (Nobuyoshi Nakada)

- Status changed from Open to Feedback

Can't you show the process memory map at the failure?
The call seems to try expanding the stack to 0x7ffff000200, but there needs more margin?

#2 - 04/10/2015 05:00 PM - mva (Vadim A. Misbakh-Soloviov)

Uh... Sorry for delay! Somehow I didn't get email notification from your redmine :(

So, I'm not sure, if this is exactly what you asked about (if it is not — I'd be happy to provide output of any gdb command you tell ;), but here it is.

Although, that is output from my laptop (with 16GB RAM), and not from the build server of downstream bug reporter. So, memory address you're specified in the question would probably be invalid in that mapping...

```
(gdb) cont
Continuing.
```

```
Program received signal SIGSEGV, Segmentation fault.
0x0000555555704b9f in reserve_stack ()
```

```
(gdb) bt
#0 0x0000555555704b9f in reserve_stack ()
#1 0x0000555555707a4b in ruby_init_stack ()
#2 0x000055555557ce32 in main ()
```

```
(gdb) info all
rax             0x7fcca0 8375456
rbx             0x7fffffff7ff100 140737479962880
rcx             0x7fffffff7fed60 140737479961952
rdx             0x7fc000 8372224
rsi             0x7fffffffbbd80 140737488338304
rdi             0x3 3
rbp             0x7fffffffbb0 0x7fffffffbb0
rsp             0x7fffffff7fed60 0x7fffffff7fed60
r8              0x5555559e3f20 93824997015328
r9              0x5555559e3f20 93824997015328
r10             0x5555559e3f10 93824997015312
r11             0x246 582
r12             0x7fdf00 8380160
r13             0x7fffffff020 140737488338976
r14             0x0 0
r15             0x0 0
rip             0x555555704b9f 0x555555704b9f <reserve_stack+175>
eflags         0x10206 [ PF IF RF ]
cs              0x33 51
ss              0x2b 43
```



```

    0xff000000ff00, 0xff0000000000ff00, 0x0, 0x0}, v2_int128 = {0xff0000000000ff000000ff000000ff00, 0x00000000
0000000000000000000000000000}}
ymm13      {v8_float = {0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0}, v4_double = {0x0, 0x0, 0x0, 0x0}, v32_int
8 = {0x0 <repeats 32 times>}, v16_int16 = {0x0 <repeats 16 times>}, v8_int32 = {0x0, 0x0, 0x0, 0x0, 0x0, 0x0,
0x0, 0x0}, v4_int64 = {0x0, 0x0, 0x0, 0x0}, v2_int128 = {0x00000000000000000000000000000000, 0x000000000000
0000000000000000000}}
ymm14      {v8_float = {0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0}, v4_double = {0x0, 0x0, 0x0, 0x0}, v32_int
8 = {0x0 <repeats 32 times>}, v16_int16 = {0x0 <repeats 16 times>}, v8_int32 = {0x0, 0x0, 0x0, 0x0, 0x0, 0x0,
0x0, 0x0}, v4_int64 = {0x0, 0x0, 0x0, 0x0}, v2_int128 = {0x00000000000000000000000000000000, 0x000000000000
0000000000000000000}}
ymm15      {v8_float = {0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0}, v4_double = {0x0, 0x0, 0x0, 0x0}, v32_int
8 = {0x0 <repeats 32 times>}, v16_int16 = {0x0 <repeats 16 times>}, v8_int32 = {0x0, 0x0, 0x0, 0x0, 0x0, 0x0,
0x0, 0x0}, v4_int64 = {0x0, 0x0, 0x0, 0x0}, v2_int128 = {0x00000000000000000000000000000000, 0x000000000000
0000000000000000000}}

```

```

(gdb) info proc all
process 73683
cmdline = '/var/tmp/portage/dev-lang/ruby-2.2.1/work/ruby-2.2.1/miniruby'
cwd = '/var/tmp/portage/dev-lang/ruby-2.2.1/work/ruby-2.2.1'
exe = '/var/tmp/portage/dev-lang/ruby-2.2.1/work/ruby-2.2.1/miniruby'
Mapped address spaces:

```

Start Addr	End Addr	Size	Offset	objfile
0x55555554000	0x5555557cd000	0x279000	0x0	/var/tmp/portage/dev-lang/ruby-2.2.1/work/ruby-2.2.1/miniruby
0x5555559cc000	0x5555559d2000	0x6000	0x278000	/var/tmp/portage/dev-lang/ruby-2.2.1/work/ruby-2.2.1/miniruby
0x5555559d2000	0x5555559d3000	0x1000	0x27e000	/var/tmp/portage/dev-lang/ruby-2.2.1/work/ruby-2.2.1/miniruby
0x5555559d3000	0x555555a04000	0x31000	0x0	[heap]
0x7ffff6b88000	0x7ffff6e42000	0x2ba000	0x0	/usr/lib64/locale/locale-archive
0x7ffff6e42000	0x7ffff6ffa000	0x1b8000	0x0	/lib64/libc-2.19.so
0x7ffff6ffa000	0x7ffff71f9000	0x1ff000	0x1b8000	/lib64/libc-2.19.so
0x7ffff71f9000	0x7ffff71fd000	0x4000	0x1b7000	/lib64/libc-2.19.so
0x7ffff71fd000	0x7ffff71ff000	0x2000	0x1bb000	/lib64/libc-2.19.so
0x7ffff71ff000	0x7ffff7203000	0x4000	0x0	
0x7ffff7203000	0x7ffff7306000	0x103000	0x0	/lib64/libm-2.19.so
0x7ffff7306000	0x7ffff7505000	0x1ff000	0x103000	/lib64/libm-2.19.so
0x7ffff7505000	0x7ffff7506000	0x1000	0x102000	/lib64/libm-2.19.so
0x7ffff7506000	0x7ffff7507000	0x1000	0x103000	/lib64/libm-2.19.so
0x7ffff7507000	0x7ffff750f000	0x8000	0x0	/lib64/libcrypt-2.19.so
0x7ffff750f000	0x7ffff770f000	0x200000	0x8000	/lib64/libcrypt-2.19.so
0x7ffff770f000	0x7ffff7710000	0x1000	0x8000	/lib64/libcrypt-2.19.so
0x7ffff7710000	0x7ffff7711000	0x1000	0x9000	/lib64/libcrypt-2.19.so
0x7ffff7711000	0x7ffff773f000	0x2e000	0x0	
0x7ffff773f000	0x7ffff7742000	0x3000	0x0	/lib64/libdl-2.19.so
0x7ffff7742000	0x7ffff7941000	0x1ff000	0x3000	/lib64/libdl-2.19.so
0x7ffff7941000	0x7ffff7942000	0x1000	0x2000	/lib64/libdl-2.19.so
0x7ffff7942000	0x7ffff7943000	0x1000	0x3000	/lib64/libdl-2.19.so
0x7ffff7943000	0x7ffff79b9000	0x76000	0x0	/usr/lib64/libgmp.so.10.2.0
0x7ffff79b9000	0x7ffff7bb8000	0x1ff000	0x76000	/usr/lib64/libgmp.so.10.2.0
0x7ffff7bb8000	0x7ffff7bb9000	0x1000	0x75000	/usr/lib64/libgmp.so.10.2.0
0x7ffff7bb9000	0x7ffff7bba000	0x1000	0x76000	/usr/lib64/libgmp.so.10.2.0
0x7ffff7bba000	0x7ffff7bd4000	0x1a000	0x0	/lib64/libpthread-2.19.so
0x7ffff7bd4000	0x7ffff7dd4000	0x200000	0x1a000	/lib64/libpthread-2.19.so
0x7ffff7dd4000	0x7ffff7dd5000	0x1000	0x1a000	/lib64/libpthread-2.19.so
0x7ffff7dd5000	0x7ffff7dd6000	0x1000	0x1b000	/lib64/libpthread-2.19.so
0x7ffff7dd6000	0x7ffff7dda000	0x4000	0x0	
0x7ffff7dda000	0x7ffff7dfc000	0x22000	0x0	/lib64/ld-2.19.so
0x7ffff7dfc000	0x7ffff7ff000	0x5000	0x0	
0x7ffff7ff000	0x7ffff7ff8000	0x1000	0x0	
0x7ffff7ff8000	0x7ffff7ffa000	0x2000	0x0	[vvar]
0x7ffff7ffa000	0x7ffff7ffc000	0x2000	0x0	[vdso]
0x7ffff7ffc000	0x7ffff7ffd000	0x1000	0x22000	/lib64/ld-2.19.so
0x7ffff7ffd000	0x7ffff7ffe000	0x1000	0x23000	/lib64/ld-2.19.so
0x7ffff7ffe000	0x7ffff7fff000	0x1000	0x0	
0x7ffff7fff000	0x7ffff7fff000	0x800000	0x0	[stack]
0xffffffffff600000	0xffffffffff601000	0x1000	0x0	[vsyscall]

```

Name: miniruby
State: t (tracing stop)
Tgid: 73683
Ngid: 0
Pid: 73683
PPid: 73681
TracerPid: 73681

```

```
Uid: 0 0 0 0
Gid: 0 0 0 0
FDSize: 64
Groups: 0 1 2 3 4 6 10 11 20 26 27
VmPeak: 29900 kB
VmSize: 29900 kB
VmLck: 0 kB
VmPin: 0 kB
VmHWM: 10640 kB
VmRSS: 10640 kB
VmData: 456 kB
VmStk: 8196 kB
VmExe: 2532 kB
VmLib: 3552 kB
VmPTE: 76 kB
VmSwap: 0 kB
Threads: 1
SigQ: 0/63595
SigPnd: 0000000000000000
ShdPnd: 0000000000000000
SigBlk: 0000000000000000
SigIgn: 0000000001001000
SigCgt: 0000000180000000
CapInh: 0000000000000000
CapPrm: 0000003fffffffff
CapEff: 0000003fffffffff
CapBnd: 0000003fffffffff
Seccomp: 0
Cpus_allowed: ff
Cpus_allowed_list: 0-7
Mems_allowed: 00000000,00000001
Mems_allowed_list: 0
voluntary_ctxt_switches: 8
nonvoluntary_ctxt_switches: 2
Process: 73683
Exec file: miniruby
State: t
Parent process: 73681
Process group: 73683
Session id: 61853
TTY: 34831
TTY owner process group: 73681
Flags: 0x40006100
Minor faults (no memory page): 2338
Minor faults, children: 0
Major faults (memory page faults): 0
Major faults, children: 0
utime: 0
stime: 0
utime, children: 0
stime, children: 0
jiffies remaining in current time slice: 20
'nice' value: 0
jiffies until next timeout: 1
jiffies until next SIGALRM: 0
start time (jiffies since system boot): 27131408
Virtual memory size: 30617600
Resident set size: 2660
rlim: 18446744073709551615
Start of text: 0x555555554000
End of text: 0x5555557cc3e4
Start of stack: 0x7fffffff020
```

#3 - 04/11/2015 09:41 PM - mva (Vadim A. Misbakh-Soloviov)

Is it any more info I can provide? :)

#4 - 04/14/2015 04:52 PM - mva (Vadim A. Misbakh-Soloviov)

By the way, I just found (with help of the downstream's Ruby team), that adding `-fno-stack-check` to the CFLAGS makes it to build fine (and miniruby don't segfaults). But I think, it is not the good way to solve this problem :-/

#5 - 04/14/2015 08:30 PM - mva (Vadim A. Misbakh-Soloviov)

Oh, and yes, adding `-fstack-check` to the CFLAGS even on non-Hardened system/toolchain reproduce the error ;)

P.S. As for now, latest Ruby-2.1 release is affected too!

#6 - 04/14/2015 10:35 PM - nobu (Nobuyoshi Nakada)

- Status changed from *Feedback* to *Closed*

- % Done changed from 0 to 100

Applied in changeset r50316.

thread_pthread.c: keep sp safe zone

- thread_pthread.c (reserve_stack): keep sp safe zone to get rid of crash by -fstack-check. [ruby-core:68740] [Bug [#11030](#)]

#7 - 04/15/2015 01:45 PM - nagachika (Tomoyuki Chikanaga)

- Backport changed from 2.0.0: UNKNOWN, 2.1: UNKNOWN, 2.2: UNKNOWN to 2.0.0: UNKNOWN, 2.1: REQUIRED, 2.2: REQUIRED

#8 - 04/28/2015 05:14 AM - usa (Usaku NAKAMURA)

- Backport changed from 2.0.0: UNKNOWN, 2.1: REQUIRED, 2.2: REQUIRED to 2.0.0: UNKNOWN, 2.1: DONE, 2.2: REQUIRED

ruby_2_1 r50396 merged revision(s) 50316.

#9 - 05/13/2015 03:28 PM - nagachika (Tomoyuki Chikanaga)

- Backport changed from 2.0.0: UNKNOWN, 2.1: DONE, 2.2: REQUIRED to 2.0.0: UNKNOWN, 2.1: DONE, 2.2: DONE

Backported into ruby_2_2 branch at r50484.

#10 - 06/04/2015 09:45 AM - nobu (Nobuyoshi Nakada)

- Related to Bug #11001: 2.2.1 Segmentation fault in reserve_stack() function. added

#11 - 06/14/2018 10:28 AM - knedlsepp (Josef Kemetmüller)

For me it helped to increase my stack size limit using ulimit -s unlimited.