

Ruby trunk - Bug #9600

sysconf(_SC_GETGR_R_SIZE_MAX) is just a hint for getgrnam_r()

03/06/2014 07:15 AM - ReiOdaira (Rei Odaira)

Status: Closed	
Priority: Normal	
Assignee:	
Target version:	
ruby -v: ruby 2.2.0dev (2014-03-05) [powerpc64-linux]	Backport: 1.9.3: REQUIRED, 2.0.0: DONE, 2.1: DONE
Description When there is a group that has a lot of members, TestProcess#test_execopts_gid fails. Following is a more simple example: <pre>\$ ruby -e 'system("true", gid: "largegroup")' -e:1:in `system': Numerical result out of range - getgrnam_r (Errno::ERANGE) from -e:1:in `<main>'</pre> This wrong exception happens because obj2gid() in process.c calls getgrnam_r() with a buffer that was allocated based on the size returned by sysconf(_SC_GETGR_R_SIZE_MAX). In Linux, sysconf(_SC_GETGR_R_SIZE_MAX) returns 1024, but actually this value is just a hint, so obj2gid() should gradually extend the buffer until getgrnam_r() no longer throws ERANGE. The same issue was reported in the following page: http://tomlee.co/2012/10/problems-with-large-linux-unix-groups-and-getgrgid_r-getgrnam_r/	

Associated revisions

Revision 119d6623 - 03/08/2014 04:30 AM - nobu (Nobuyoshi Nakada)

process.c: expand buffer on ERANGE

- process.c (obj2uid, obj2gid): now getpwnam_r() and getgrnam_r() may need larger buffers than sysconf values, so retry with expanding the buffer when ERANGE is returned. [ruby-core:61325] [Bug #9600]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@45290 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 45290 - 03/08/2014 04:30 AM - nobu (Nobuyoshi Nakada)

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Revision 7fd56bd3 - 06/16/2014 03:33 PM - nagachika (Tomoyuki Chikanaga)

merge revision(s) r45287,r45288,r45289,r45290: [Backport #9600]

```
process.c: tmp buffer instead of alloca
```

```
* process.c (OBJ2UID1, OBJ2GID1): separate from OBJ2UID and
```

OBJ2GID respectively, need given buffers.

```
* process.c (OBJ2UID, OBJ2GID): no longer need PREPARE_GETPWNAM
```

and PREPARE_GETGRNAM.

```
* process.c (obj2uid, obj2gid): use tmp buffer instead of alloca
```

to get rid of potential stack overflow.

```
* process.c (obj2uid, obj2gid): now getpwnam_r() and getgrnam_r()
```

may need larger buffers than sysconf values, so retry with expanding the buffer when ERANGE is returned.

[ruby-core:61325] [Bug #9600]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_1@46449 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 46449 - 06/16/2014 03:33 PM - nagachika (Tomoyuki Chikanaga)

merge revision(s) r45287,r45288,r45289,r45290: [Backport #9600]

```
process.c: tmp buffer instead of alloca
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* process.c (OBJ2UID1, OBJ2GID1): separate from OBJ2UID and
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OBJ2GID respectively, need given buffers.

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* process.c (OBJ2UID, OBJ2GID): no longer need PREPARE_GETPWNAM
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and PREPARE_GETGRNAM.

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* process.c (obj2uid, obj2gid): use tmp buffer instead of alloca
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to get rid of potential stack overflow.

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* process.c (obj2uid, obj2gid): now getpwnam_r() and getgrnam_r()
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may need larger buffers than sysconf values, so retry with expanding the buffer when ERANGE is returned.

[ruby-core:61325] [Bug #9600]

Revision c339f208 - 06/23/2014 08:32 AM - usa (Usaku NAKAMURA)

merge revision(s) 45287:45290: [Backport #9600]

```
* process.c (obj2uid, obj2gid): now getpwnam_r() and getgrnam_r()
may need larger buffers than sysconf values, so retry with
expanding the buffer when ERANGE is returned.
[ruby-core:61325] [Bug #9600]
```

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_0_0@46511 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 46511 - 06/23/2014 08:32 AM - usa (Usaku NAKAMURA)

merge revision(s) 45287:45290: [Backport #9600]

```
* process.c (obj2uid, obj2gid): now getpwnam_r() and getgrnam_r()
may need larger buffers than sysconf values, so retry with
expanding the buffer when ERANGE is returned.
[ruby-core:61325] [Bug #9600]
```

History

#1 - 03/06/2014 08:02 AM - nobu (Nobuyoshi Nakada)

Isn't there any way to get the real number?

#2 - 03/06/2014 10:27 AM - naruse (Yui NARUSE)

Rei Odaira wrote:

but actually this value is just a hint, so `obj2gid()` should gradually extend the buffer until `getgrnam_r()` no longer throws `ERANGE`.

SuSv7 changes it.

- <http://pubs.opengroup.org/onlinepubs/009695399/functions/getgrnam.html> v6's `getgrnam_r`
- <http://pubs.opengroup.org/onlinepubs/9699919799/functions/getgrnam.html> v7's `getgrnam_r`
- <http://pubs.opengroup.org/onlinepubs/9699919799/functions/sysconf.html> v7's `sysconf`

SD5-XSH-ERN-166 is applied, changing "Maximum size" to "Initial size" for the "Maximum size of ..." entries in the table in the DESCRIPTION.

But I didn't find SD5-XSH-ERN-166 itself.

#3 - 03/06/2014 10:43 AM - akr (Akira Tanaka)

Off topic.

Yui NARUSE wrote:

SuSv7 changes it.

- <http://pubs.opengroup.org/onlinepubs/009695399/functions/getgrnam.html> v6's `getgrnam_r`
- <http://pubs.opengroup.org/onlinepubs/9699919799/functions/getgrnam.html> v7's `getgrnam_r`
- <http://pubs.opengroup.org/onlinepubs/9699919799/functions/sysconf.html> v7's `sysconf`

There is no Single Unix Specification version 7 (yet).

The issue number is not the version number.

SUSv3:

| The Single UNIX Specification, Version 3 is made up of the Base Specifications, Issue 6 and

| X/Open Curses, Issue 4, Version 2.

http://www.unix.org/version3/sus_contents.html

SUSv4:

| The Single UNIX Specification uses The Open Group Base Specifications, Issue 7 documentation as its core.

| The documentation is structured as follows:

| * The Base Specifications, Issue 7, composed of:

| - Base Definitions, Issue 7 (XBD7)

| - System Interfaces, Issue 7 (XSH7)

| - Shell and Utilities, Issue 7 (XCU7)

| - Rationale, Issue 7, (XRAT7) (Informative)

| * X/Open Curses, Issue 7

<http://www.unix.org/version4/overview.html>

#4 - 03/07/2014 08:00 PM - djberg96 (Daniel Berger)

I don't think there's a way to get it. You'll have to rescue and retry with a realloc'ed buffer.

One bit of trickiness is that different platforms seem to set `errno` to different values on different platforms. In my own sys-admin gem, I caught `Errno::ERANGE` on Linux and Solaris, while on Darwin it was `Errno::ENOENT`, and on FreeBSD it was `Errno::ENOTTY`.

#5 - 03/08/2014 04:31 AM - nobu (Nobuyoshi Nakada)

- Status changed from Open to Closed

- % Done changed from 0 to 100

Applied in changeset r45290.

process.c: expand buffer on ERANGE

- process.c (`obj2uid`, `obj2gid`): now `getpwnam_r()` and `getgrnam_r()` may need larger buffers than `sysconf` values, so retry with expanding the buffer when `ERANGE` is returned. [ruby-core:61325] [Bug #9600]

#6 - 04/06/2014 05:11 AM - ReiOdaira (Rei Odaira)

Wouldn't it be possible to backport this to 2.0.0 and 2.1, where the same issue resides?

#7 - 04/06/2014 09:59 PM - naruse (Yui NARUSE)

- Backport changed from 1.9.3: UNKNOWN, 2.0.0: UNKNOWN, 2.1: UNKNOWN to 1.9.3: REQUIRED, 2.0.0: REQUIRED, 2.1: REQUIRED

#8 - 06/16/2014 03:34 PM - nagachika (Tomoyuki Chikanaga)

- Backport changed from 1.9.3: REQUIRED, 2.0.0: REQUIRED, 2.1: REQUIRED to 1.9.3: REQUIRED, 2.0.0: REQUIRED, 2.1: DONE

r45287, r45288, r45289 and r45290 were backported into ruby_2_1 branch at r46449.

#9 - 06/23/2014 08:33 AM - usa (Usaku NAKAMURA)

- Backport changed from 1.9.3: REQUIRED, 2.0.0: REQUIRED, 2.1: DONE to 1.9.3: REQUIRED, 2.0.0: DONE, 2.1: DONE

backported into ruby_2_0_0 at r46511.