

Ruby master - Feature #5291

Enabling GC Profiler GC_PROFILE_MORE_DETAIL and CALC_EXACT_MALLOC_SIZE

09/07/2011 02:05 PM - cfis (Charlie Savage)

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| Status: | Closed |
| Priority: | Normal |
| Assignee: | |
| Target version: | 1.9.3 |
| Description | |
| <p>I would like to hook ruby-prof into the new GC profiler. However, by default a lot of the profile stats are disabled by these two defines in gcc.c.</p> <pre>#define GC_PROFILE_MORE_DETAIL 0 #define CALC_EXACT_MALLOC_SIZE 0</pre> <p>To turn on these stats, you have to modify the ruby source code! That is a high barrier for most people.</p> <p>So would it be possible to:</p> <ul style="list-style-type: none">• Set them to 1 by default. Or would this be too much of a performance hit?• or -• Remove the lines entirely and then change the logic in the file from this: <pre>#if GC_PROFILE_MORE_DETAIL</pre> <p>To this:</p> <pre>#if defined?(GC_PROFILE_MORE_DETAIL)</pre> <p>Then when buildig Ruby you could tell the compiler to define the symbols (-DGC_PROFILE_MORE_DETAIL).</p> <ul style="list-style-type: none">• or -• Add these two defines to the ./configure script so they end up in config.h. That would make it easy for users to enable them if they wish, and would be also allow ruby-prof to use them too. <p>Would a patch be accepted to do this?</p> | |

Associated revisions

Revision 49042ae8 - 09/09/2011 11:34 PM - ko1 (Koichi Sasada)

- gc.c (GC_PROFILE_MORE_DETAIL, CALC_EXACT_MALLOC_SIZE): define macros only if they are not defined. fixes: [Ruby 1.9 - Feature #5291]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@33243 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 33243 - 09/09/2011 11:34 PM - ko1 (Koichi Sasada)

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History

#1 - 09/07/2011 02:53 PM - normalperson (Eric Wong)

Charlie Savage cfis@savagexi.com wrote:

```
#define CALC_EXACT_MALLOC_SIZE 0
```

I tried flipping this a few months back in trunk but didn't have time to investigate what went wrong when I did. I'm not sure how much people care for it or if it's even maintained/tested by anyone (I'm not sure I care).

I have found (and helped fix at least one) 3rd-party extensions that had an issue with this (due to a x*alloc() paired with a regular free() or vice-versa). So I suspect this is a common (but currently non-fatal) bug in other extensions, too.

Anyways, several (most?) malloc implementations support malloc_usable_size() (or similar) and have various hooks that could be used to instrument malloc. Unfortunately the various extensions I know of aren't compatible with each other (dlmalloc/ptmalloc, tcmalloc, jemalloc).

#2 - 09/07/2011 03:04 PM - cfis (Charlie Savage)

FYI, pairing a xalloc with a free can be fatal on windows depending on how Ruby is built (mingw is safe, VC++ isn't) and what runtime c libraries are used. See the "Caution" note at the bottom of:

<http://msdn.microsoft.com/en-us/library/2kzt1wy3%28v=vs.71%29.aspx>

Thanks for fixing them!

#3 - 09/09/2011 12:59 AM - ko1 (Koichi Sasada)

(2011/09/06 23:04), Charlie Savage wrote:

FYI, pairing a xalloc with a free can be fatal on windows depending on how Ruby is built (mingw is safe, VC++ isn't) and what runtime c libraries are used. See the "Caution" note at the bottom of:

Good point. This measurements can check such errors :P

--
// SASADA Koichi at atdot dot net

#4 - 09/09/2011 12:59 AM - ko1 (Koichi Sasada)

(2011/09/06 22:05), Charlie Savage wrote:

Issue [#5291](#) has been reported by Charlie Savage.

Feature #5291: Enabling GC Profiler GC_PROFILE_MORE_DETAIL and CALC_EXACT_MALLOC_SIZE
<http://redmine.ruby-lang.org/issues/5291>

Author: Charlie Savage
Status: Open
Priority: Normal
Assignee:
Category: core
Target version: 1.9.3

I would like to hook ruby-prof into the new GC profiler. However, by default a lot of the profile stats are disabled by these two defines in gcc.c.

```
#define GC_PROFILE_MORE_DETAIL 0
#define CALC_EXACT_MALLOC_SIZE 0
```

To turn on these stats, you have to modify the ruby source code! That is a high barrier for most people.

So would it be possible to:

- Set them to 1 by default. Or would this be too much of a performance hit?
- or -
- Remove the lines entirely and then change the logic in the file from this:

```
#if GC_PROFILE_MORE_DETAIL
```

To this:

```
#if defined?(GC_PROFILE_MORE_DETAIL)
```

Then when buildig Ruby you could tell the compiler to define the symbols (-DGC_PROFILE_MORE_DETAIL).

- or -
- Add these two defines to the ./configure script so they end up in config.h. That would make it easy for users to enable them if they wish, and would be also allow ruby-prof to use them too.

Would a patch be accepted to do this?

How about it?

Index: gc.c

```
=====
--- gc.c (revision 33165)
+++ gc.c (working copy)
@@ -93,7 +93,10 @@
int ruby_gc_debug_indent = 0;

/* for GC profile */
+#ifndef GC_PROFILE_MORE_DETAIL
#define GC_PROFILE_MORE_DETAIL 0
+#endif
+
typedef struct gc_profile_record {
double gc_time;
double gc_mark_time;
@@ -309,7 +312,9 @@
struct gc_list *next;
};

+#ifndef CALC_EXACT_MALLOC_SIZE
#define CALC_EXACT_MALLOC_SIZE 0
+#endif

typedef struct rb_objspace {
struct {
--
// SASADA Koichi at atdot dot net
```

#5 - 09/09/2011 02:41 AM - cfis (Charlie Savage)

Yes, that would be much better. Is it too late for this to be part of 1.9.3?

Thank you!

Charlie

#6 - 09/10/2011 08:34 AM - ko1 (Koichi Sasada)

- *Status changed from Open to Closed*

- *% Done changed from 0 to 100*

This issue was solved with changeset r33243.

Charlie, thank you for reporting this issue.

Your contribution to Ruby is greatly appreciated.

May Ruby be with you.

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