

Ruby - Bug #16486

Hash.ruby2_keywords?(hash) and Hash.ruby2_keywords!(hash)

01/06/2020 09:46 AM - mame (Yusuke Endoh)

Status:	Closed	Backport: 2.5: DONTNEED, 2.6: DONTNEED, 2.7: DONE
Priority:	Normal	
Assignee:	matz (Yukihiro Matsumoto)	
Target version:		
ruby -v:		
Description		
<p>Hash's ruby2_keywords flag is designed to be as implicit as possible, but unfortunately, sometimes we need to handle the flag explicitly. In ActiveSupport, the whole arguments are serialized and deserialized, and the process removes the flag; in this case, we need to check and save the flag when serializing, and restore the flag when deserializing.</p> <p>https://github.com/rails/rails/pull/38105#discussion_r361863767</p> <p>It is theoretically possible by a very hacky code, but it would be good to provide them officially.</p> <p>https://github.com/ruby/ruby/pull/2818</p> <ul style="list-style-type: none">• Hash.ruby2_keywords?(hash) checks if hash is flagged or not.• Hash.ruby2_keywords!(hash) flags a given hash. <p>The reason why I don't add them as instance methods (Hash#ruby2_keywords?) is that they are never for casual use. The ruby2_keywords flag will be removed after enough migration time. Casual use of them will make it difficult to remove, so I'd like to keep them for non-casual use.</p> <p>(I thought RubyVM.ruby2_keywords?(hash) is good but @Eregon (Benoit Daloze) will be against it :-)</p> <p>@jeremyevans0 (Jeremy Evans) Could you tell me your opinion?</p>		

Associated revisions

Revision 7cfe93c028fbf7aa0022ca8a4ac6a66d0103337a - 01/17/2020 08:20 AM - mame (Yusuke Endoh)

hash.c: Add a feature to manipulate ruby2_keywords flag

It was found that a feature to check and add ruby2_keywords flag to an existing Hash is needed when arguments are serialized and deserialized. It is possible to do the same without explicit APIs, but it would be good to provide them as a core feature.

https://github.com/rails/rails/pull/38105#discussion_r361863767

Hash.ruby2_keywords_hash?(hash) checks if hash is flagged or not.
Hash.ruby2_keywords_hash(hash) returns a duplicated hash that has a ruby2_keywords flag,

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Revision 9820f9ee0aaccd78e6e0489e8915d3925c6ee97c - 02/18/2020 06:09 AM - mame (Yusuke Endoh)

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History

#1 - 01/06/2020 09:47 AM - naruse (Yui NARUSE)

- Tracker changed from Feature to Bug

- Backport set to 2.5: DONTNEED, 2.6: DONTNEED, 2.7: REQUIRED

#2 - 01/06/2020 02:53 PM - jeremyevans0 (Jeremy Evans)

I'm fine with adding these methods, and I agree that making them class methods instead of instance methods discourages casual use.

#3 - 01/06/2020 06:10 PM - Eregon (Benoit Daloze)

+1, sounds good to me as class methods.

Could also be under `ExperimentalFeatures`, but not a great fit for this.

#4 - 01/06/2020 11:27 PM - mame (Yusuke Endoh)

- Status changed from Open to Assigned

- Assignee set to matz (Yukihiro Matsumoto)

[@jeremyevans0 \(Jeremy Evans\)](#) [@Eregon \(Benoit Daloze\)](#) Thanks, I put this on the next dev meeting.

#5 - 01/07/2020 02:08 PM - Dan0042 (Daniel DeLorme)

I would like to recommend this be a non-mutating method. Instead of `Hash.ruby2_keywords!(hash)` it should be something like `hash = Hash.as_ruby2_keywords(hash)` to prevent misuse.

#6 - 01/08/2020 11:19 AM - Eregon (Benoit Daloze)

[@Dan0042](#) Very good point, I agree there should be no way to change that flag inplace, since there isn't currently (`**h` will copy Hash). Knowing that the flag can never change for a given Hash instance is a useful guarantee, e.g., when debugging.

#7 - 01/08/2020 11:53 PM - mame (Yusuke Endoh)

A memo for the dev-meeting discussion

- What we should provide as `Hash.ruby2_keywords!?` mutating version, non-mutating version, or both?
- Should it raise a `FrozenError` if a hash is frozen?

#8 - 01/09/2020 10:34 AM - Eregon (Benoit Daloze)

Copying from the discussion of the PR:

[@Eregon \(Benoit Daloze\)](#) IMO, the mutating version is enough here because it is not for a casual use; in the `ActiveJob` case, mutating version is slightly preferable (as [@kamipo](#) said), and currently there is no known use case where non-mutating version is preferable. But I'll discuss the behavior (and method name) at the next dev-meeting.

The problem is this tiny decision completely prevents other implementations or designs for `ruby2_keywords`. For instance, if we wanted to try using a `KwHash` subclass instead of a flag, as suggested in <https://bugs.ruby-lang.org/issues/16463#note-20>, the sole existence of `Hash.ruby2_keywords!` prevents it entirely, or would require to change the class of an existing object which is extremely ugly (for semantics at least). It also makes debugging significantly harder IMHO.

So I think making it mutating here is needlessly restricting, and I oppose it. Making a copy of the Hash is not a big cost when it's deserialized before.

Maybe we should not even introduce a new way to flag, as it's so easy to do it manually:

```
ruby2_keywords def flag_kwhash(*args)
  args.last
end

kw = flag_kwhash(**h)
```

#9 - 01/14/2020 06:27 AM - mame (Yusuke Endoh)

Hi, I talked about this ticket with ko1, nobu, and znz before the dev-meeting. After the discussion, I am still against this.

We premise that the `ruby2_keywords` flag is never a wonderful thing. We want to delete it in the future. Module `#ruby2_keywords` will serve as a mark showing "we need to change this method definition so to accept not only positional rest arguments but also keyword ones explicitly if `ruby2_keywords` flag is deleted."

So, assuming the flag is removed at Ruby 4.0, we'd like users to change their code in the following style:

```
# 2.6
def foo(*args)
  bar(*args)
```

```

end

# 2.7 .. 4.0 (until ruby2_keywords flag is deprecated)
ruby2_keywords def foo(*args)
  bar(*args)
end

# 4.0 ..
def foo(*args, **kwargs)
  bar(*args, **kwargs)
end

# or, if possible
def foo(...)
  bar(...)
end

```

If we set `ruby2_keywords` by default, users cannot identify where to fix, and their code will break suddenly after the flag is removed. It would be unacceptable and we will be unable to deprecate `Module#ruby2_keywords` forever. This is not what we want.

#10 - 01/14/2020 06:47 AM - mame (Yusuke Endoh)

Please ignore the previous comment. I took the wrong ticket. It should have been written in [#16463](#).

#11 - 01/16/2020 04:28 AM - matz (Yukihiro Matsumoto)

I propose

- `Hash.ruby_keywords_hash(hash)` to turn the flag on (non mutating)
- `Hash.ruby_keywords_hash?(hash)` to check the flag

Matz.

#12 - 01/17/2020 08:20 AM - mame (Yusuke Endoh)

- Status changed from Assigned to Closed

Applied in changeset [git|7cfe93c028fbf7aa0022ca8a4ac6a66d0103337a](#).

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#13 - 03/13/2020 12:27 PM - naruse (Yui NARUSE)

- Backport changed from 2.5: DONTNEED, 2.6: DONTNEED, 2.7: REQUIRED to 2.5: DONTNEED, 2.6: DONTNEED, 2.7: DONE

ruby_2_7 9820f9ee0aaccd78e6e0489e8915d3925c6ee97c.