

Ruby master - Feature #9323

IO#writev

12/30/2013 10:08 PM - Glass_saga (Masaki Matsushita)

Status:	Closed	
Priority:	Normal	
Assignee:	Glass_saga (Masaki Matsushita)	
Target version:	2.5	
Description		
I propose addition of IO#writev. It enables gather output from multiple buffers. If writev(2) is not available, IO#writev uses Array#join to emulate atomic write.		
Related issues:		
Related to Ruby master - Feature #9420: warn and puts should be atomic		Closed
Related to Ruby master - Feature #14042: IO#puts: use writev if available		Closed

Associated revisions

Revision 60343 - 10/22/2017 02:11 AM - Glass_saga (Masaki Matsushita)

Make IO#write accept multiple arguments

io.c: make IO#write accept multiple arguments.
it uses writev(2) if possible.

Revision 6e3ff2ec - 10/22/2017 06:22 AM - nobu (Nobuyoshi Nakada)

io.c: fix local variables

- io.c (io_writev): fix local variable declarations, when writev(2) is not available. [Feature #9323]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@60351 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 60351 - 10/22/2017 06:22 AM - nobu (Nobuyoshi Nakada)

io.c: fix local variables

- io.c (io_writev): fix local variable declarations, when writev(2) is not available. [Feature #9323]

Revision 60351 - 10/22/2017 06:22 AM - nobu (Nobuyoshi Nakada)

io.c: fix local variables

- io.c (io_writev): fix local variable declarations, when writev(2) is not available. [Feature #9323]

Revision 60351 - 10/22/2017 06:22 AM - nobu (Nobuyoshi Nakada)

io.c: fix local variables

- io.c (io_writev): fix local variable declarations, when writev(2) is not available. [Feature #9323]

Revision c0f40369 - 10/23/2017 02:25 AM - nobu (Nobuyoshi Nakada)

io.c: no restriction

- io.c (io_write_m): remove argc restriction upto IOV_MAX-1. [Feature #9323]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@60370 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 60370 - 10/23/2017 02:25 AM - nobu (Nobuyoshi Nakada)

io.c: no restriction

- io.c (io_write_m): remove argc restriction upto IOV_MAX-1. [Feature #9323]

Revision 60370 - 10/23/2017 02:25 AM - nobu (Nobuyoshi Nakada)

io.c: no restriction

- io.c (io_write_m): remove argc restriction upto IOV_MAX-1. [Feature #9323]

Revision 60370 - 10/23/2017 02:25 AM - nobu (Nobuyoshi Nakada)

io.c: no restriction

- io.c (io_write_m): remove argc restriction upto IOV_MAX-1. [Feature #9323]

Revision 92023a8f - 10/23/2017 05:09 AM - nobu (Nobuyoshi Nakada)

io.c: fix total

- io.c (io_writv): total may be a bignum. [Feature #9323]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@60371 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 60371 - 10/23/2017 05:09 AM - nobu (Nobuyoshi Nakada)

io.c: fix total

- io.c (io_writv): total may be a bignum. [Feature #9323]

Revision 60371 - 10/23/2017 05:09 AM - nobu (Nobuyoshi Nakada)

io.c: fix total

- io.c (io_writv): total may be a bignum. [Feature #9323]

Revision 60371 - 10/23/2017 05:09 AM - nobu (Nobuyoshi Nakada)

io.c: fix total

- io.c (io_writv): total may be a bignum. [Feature #9323]

Revision 71a7ef31 - 10/23/2017 05:09 AM - nobu (Nobuyoshi Nakada)

io.c: fix buffered output

- io.c (io_binwritv): append to buffered data, not overwriting. [Feature #9323]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@60372 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 60372 - 10/23/2017 05:09 AM - nobu (Nobuyoshi Nakada)

io.c: fix buffered output

- io.c (io_binwritv): append to buffered data, not overwriting. [Feature #9323]

Revision 60372 - 10/23/2017 05:09 AM - nobu (Nobuyoshi Nakada)

io.c: fix buffered output

- io.c (io_binwritv): append to buffered data, not overwriting. [Feature #9323]

Revision 60372 - 10/23/2017 05:09 AM - nobu (Nobuyoshi Nakada)

io.c: fix buffered output

- io.c (io_binwritv): append to buffered data, not overwriting. [Feature #9323]

Revision 08524bc5 - 10/23/2017 05:28 AM - nobu (Nobuyoshi Nakada)

io.c: fix infinite retry

- io.c (io_binwritv): fix infinite retry when flushing buffered data. [Feature #9323]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@60373 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 60373 - 10/23/2017 05:28 AM - nobu (Nobuyoshi Nakada)

io.c: fix infinite retry

- io.c (io_binwritv): fix infinite retry when flushing buffered data. [Feature #9323]

Revision 60373 - 10/23/2017 05:28 AM - nobu (Nobuyoshi Nakada)

io.c: fix infinite retry

- io.c (io_binwritev): fix infinite retry when flushing buffered data. [Feature #9323]

Revision 60373 - 10/23/2017 05:28 AM - nobu (Nobuyoshi Nakada)

io.c: fix infinite retry

- io.c (io_binwritev): fix infinite retry when flushing buffered data. [Feature #9323]

Revision 5682bc6a - 10/23/2017 06:05 AM - nobu (Nobuyoshi Nakada)

NEWS: add [Feature #9323] [ci skip]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@60376 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 60376 - 10/23/2017 06:05 AM - nobu (Nobuyoshi Nakada)

NEWS: add [Feature #9323] [ci skip]

Revision 60376 - 10/23/2017 06:05 AM - nobu (Nobuyoshi Nakada)

NEWS: add [Feature #9323] [ci skip]

Revision 60376 - 10/23/2017 06:05 AM - nobu (Nobuyoshi Nakada)

NEWS: add [Feature #9323] [ci skip]

Revision 85195203 - 10/29/2017 12:43 AM - nobu (Nobuyoshi Nakada)

io.c: convert to string at writev

- io.c (io_fwritev): needs conversion to string before accessing the content, as well as single argument case, not to segfault. [Feature #9323]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@60534 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 60534 - 10/29/2017 12:43 AM - nobu (Nobuyoshi Nakada)

io.c: convert to string at writev

- io.c (io_fwritev): needs conversion to string before accessing the content, as well as single argument case, not to segfault. [Feature #9323]

Revision 60534 - 10/29/2017 12:43 AM - nobu (Nobuyoshi Nakada)

io.c: convert to string at writev

- io.c (io_fwritev): needs conversion to string before accessing the content, as well as single argument case, not to segfault. [Feature #9323]

Revision 60534 - 10/29/2017 12:43 AM - nobu (Nobuyoshi Nakada)

io.c: convert to string at writev

- io.c (io_fwritev): needs conversion to string before accessing the content, as well as single argument case, not to segfault. [Feature #9323]

History

#1 - 01/23/2014 12:12 AM - normalperson (Eric Wong)

Unless we have use for it, I don't think rb_io_writev should be in the C API, and even less reason for it to be public for extensions in ruby/intern.h

Also, it'd probably be good to dedup the fptr->wbuf initialization code in io_binwrite*.

Otherwise, I think this is fine.

#2 - 06/03/2017 11:38 PM - ioquatix (Samuel Williams)

I think this is a great idea. It avoids a ton of string issues - e.g. concatenating strings in Ruby before writing them out. It would be great if #write could take an array, and if possible, call writev.

#3 - 06/27/2017 05:06 AM - Glass_saga (Masaki Matsushita)

- File patch.diff added

rebase to trunk

#4 - 06/27/2017 05:06 AM - Glass_saga (Masaki Matsushita)

- Target version changed from 2.2.0 to 2.5

#5 - 07/13/2017 03:28 AM - Glass_saga (Masaki Matsushita)

It would be great if #write could take an array, and if possible, call writev.

That's would be nice.

```
File.open("test", "w") do |f|
  f.write("foo", "bar", "baz") # use writev(2) if possible
end
```

#6 - 09/25/2017 08:35 AM - akr (Akira Tanaka)

- Status changed from Open to Feedback

Is there benchmark?

What the situation that writev is actually fast?

#7 - 09/26/2017 12:28 AM - Glass_saga (Masaki Matsushita)

The main purpose of IO#writev is to make a chance for users to write multiple buffers atomically, not to improve performance.

#8 - 09/26/2017 01:04 AM - normalperson (Eric Wong)

glass.saga@gmail.com wrote:

The main purpose of IO#writev is to make a chance for users to write multiple buffers atomically, not to improve performance.

IO#write on Array#join result is atomic, too; but Array#join can result in too large buffers and excessive memory use.

I wrote benchmarks for shards io-extra project on Rubyforge years ago, but I guess that email is no longer available publically. I've quoted and reposted the test to spew:

<https://80x24.org/spew/20170926005509.GA22313@starla/raw>

#9 - 10/19/2017 06:10 AM - matz (Yukihiro Matsumoto)

I vote for making IO#write take multiple arguments, probably using writev(2) inside.

Matz

#10 - 10/21/2017 12:21 PM - Glass_saga (Masaki Matsushita)

- Assignee set to Glass_saga (Masaki Matsushita)

- Status changed from Feedback to Assigned

- File patch.diff added

This patch makes IO#write accept multiple arguments.

#11 - 10/22/2017 06:23 AM - nobu (Nobuyoshi Nakada)

- Status changed from Assigned to Closed

Applied in changeset [trunk|r60351](#).

io.c: fix local variables

- io.c (io_writev): fix local variable declarations, when writev(2) is not available. [Feature [#9323](#)]

#12 - 10/23/2017 04:36 AM - shyouhei (Shyouhei Urabe)

- Related to Feature #9420: warn and puts should be atomic added

#13 - 10/23/2017 04:36 AM - shyouhei (Shyouhei Urabe)

- Related to Feature #14042: IO#puts: use writev if available added

Files

patch.diff	7.83 KB	12/30/2013	Glass_saga (Masaki Matsushita)
patch.diff	6.28 KB	06/27/2017	Glass_saga (Masaki Matsushita)
patch.diff	6.79 KB	10/21/2017	Glass_saga (Masaki Matsushita)