posix_fadvise() does not work correctly with _LARGE_FILES on 32-bit AIX

It is very strange, but the current AIX does not seem to support a 32-bit call to posix_fadvise() when _LARGE_FILES is defined.

Until it is supported, we need this ugly patch to not call posix_fadvise()....

--- io.c    (revision 46310) +++ io.c    (working copy)
@@ -8586,7 +8586,10 @@
     off = NIL_P(offset) ? 0 : NUMZOFFT(offset);
     l   = NIL_P(len)    ? 0 : NUMZOFFT(len);

-#ifdef HAVE_POSIX_FADVISE
+#ifdef HAVE_POSIX_FADVISE
  + /* AIX currently does not support a 32-bit call to posix_fadvise()*/
  + * if _LARGE_FILES is defined.
  + */
  +#ifdef (HAVE_POSIX_FADVISE) && !(defined(_AIX) && defined(_LARGE_FILES) && !defined(_ARCH_PPC 64))
  +#ifdef HAVE_POSIX_FADVISE
    + #include "io.h"
    +
    + return do_io_advise(fptr, advice, off, l);
  +
  +else
    + (void)off, (void)l); /* Ignore all hint */

FYI, detailed explanation follows:
The 2nd and 3rd arguments to posix_fadvise() are the off_t type. If _LARGE_FILES is defined, off_t is defined as long long int on the caller side. This means the 2nd and 3rd arguments are passed using two registers each on a 32-bit environment. However, the callee side does not support _LARGE_FILES, so off_t is assumed to be long int, which is passed using one register. As a result, the callee side can not receive a correct value for the 4th argument, int advice, throwing EINVAL.
io.c (rb_io_advise): AIX currently does not support a 32-bit call to
posix_fadvise() if _LARGE_FILES is defined. Patch by Rei Odaira.
[ruby-core:62968] [Bug #9914]

Revision 46382 - 06/08/2014 02:39 PM - kanemoto (Yutaka Kanemoto)
io.c (rb_io_advise): AIX currently does not support a 32-bit call to
posix_fadvise() if _LARGE_FILES is defined. Patch by Rei Odaira.
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Revision 8a2dc6f1 - 06/08/2014 03:04 PM - nobu (Nobuyoshi Nakada)
configure.in: disable posix_fadvise

- configure.in (posix_fadvise): disable use of posix_fadvise itself on 32-bit AIX. [ruby-core:62968] [Bug #9914]
git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@46384 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 46384 - 06/08/2014 03:04 PM - nobu (Nobuyoshi Nakada)
configure.in: disableposix_fadvise

- configure.in (posix_fadvise): disable use of posix_fadvise itself on 32-bit AIX. [ruby-core:62968] [Bug #9914]

Revision 46384 - 06/08/2014 03:04 PM - nobu (Nobuyoshi Nakada)
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Revision 3f21aa5d - 07/23/2014 02:50 PM - nobu (Nobuyoshi Nakada)

configure.in: missing comma

- configure.in (posix_fadvise): fix missing comma separating blocks. [ruby-core:62968] [Bug #9914]
git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@46913 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 46913 - 07/23/2014 02:50 PM - nobu (Nobuyoshi Nakada)

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Revision f9a0c3fa - 08/11/2014 01:43 PM - nagachika (Tomoyuki Chikanaga)

merge revision(s) r46382,r46384,r46913: [Backport #9914]

* io.c (rb_io_advise): AIX currently does not support a 32-bit call to
  posix_fadvise() if _LARGE_FILES is defined. Patch by Rei Odaira.
  [ruby-core:62968] [Bug #9914]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_1@47139 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 47139 - 08/11/2014 01:43 PM - nagachika (Tomoyuki Chikanaga)

merge revision(s) r46382,r46384,r46913: [Backport #9914]

* io.c (rb_io_advise): AIX currently does not support a 32-bit call to
  posix_fadvise() if _LARGE_FILES is defined. Patch by Rei Odaira.
  [ruby-core:62968] [Bug #9914]
* configure.in (posix_fadvise): disable use of posix_fadvise itself on 32-bit AIX. [ruby-core:62968] [Bug #9914]

Revision 0187f76a - 09/03/2014 04:18 AM - usa (Usaku NAKAMURA)
merge revision(s) 46382,46384,46913: [Backport #9914]

* io.c (rb_io_advise): AIX currently does not support a 32-bit call to posix_fadvise() if _LARGE_FILES is defined. Patch by Rei Odaira.
[ruby-core:62968] [Bug #9914]

* configure.in (posix_fadvise): disable use of posix_fadvise itself on 32-bit AIX. [ruby-core:62968] [Bug #9914]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby_2_0_0@47367 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 47367 - 09/03/2014 04:18 AM - usa (Usaku NAKAMURA)
merge revision(s) 46382,46384,46913: [Backport #9914]

* io.c (rb_io_advise): AIX currently does not support a 32-bit call to posix_fadvise() if _LARGE_FILES is defined. Patch by Rei Odaira.
[ruby-core:62968] [Bug #9914]

* configure.in (posix_fadvise): disable use of posix_fadvise itself on 32-bit AIX. [ruby-core:62968] [Bug #9914]

Revision 01a7a62d - 10/06/2014 09:45 AM - odaira (takumi odaira)
configure.in: Fix typo. [Bug #9914]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@47819 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 47819 - 10/06/2014 09:45 AM - odaira
configure.in: Fix typo. [Bug #9914]

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Revision 47819 - 10/06/2014 09:45 AM - odaira
configure.in: Fix typo. [Bug #9914]

Revision 94715a86 - 10/15/2014 07:12 AM - usa (Usaku NAKAMURA)
merge revision(s) 47819: [Backport #9914]

* configure.in: Fix typo. [Bug #9914]

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/branches/ruby_2_0_0@47933 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 47933 - 10/15/2014 07:12 AM - usa (Usaku NAKAMURA)
merge revision(s) 47819: [Backport #9914]

* configure.in: Fix typo. [Bug #9914]

Revision 54af7108 - 10/15/2014 02:08 PM - nagachika (Tomoyuki Chikanaga)
merge revision(s) r47819: [Backport #9914]
configure.in: Fix typo. [Bug #9914]

Revision 47945 - 10/15/2014 02:08 PM - nagachika (Tomoyuki Chikanaga)
merge revision(s) r47819: [Backport #9914]

configure.in: Fix typo. [Bug #9914]

History
#1 - 06/08/2014 02:39 PM - kanemoto (Yutaka Kanemoto)
- Status changed from Open to Closed
- % Done changed from 0 to 100

Applied in changeset r46382.

io.c (rb_io_advise): AIX currently does not support a 32-bit call to posix_fadvise() if _LARGE_FILES is defined. Patch by Rei Odaira.
[ruby-core:62968] [Bug #9914]

#2 - 07/15/2014 09:13 AM - nagachika (Tomoyuki Chikanaga)
- Backport changed from 2.0.0: UNKNOWN, 2.1: UNKNOWN to 2.0.0: REQUIRED, 2.1: REQUIRED

#3 - 08/11/2014 01:44 PM - nagachika (Tomoyuki Chikanaga)
- Backport changed from 2.0.0: REQUIRED, 2.1: REQUIRED to 2.0.0: REQUIRED, 2.1: DONE

Backported into ruby_2_1 branch at r47139.

#4 - 09/03/2014 04:18 AM - usa (Usaku NAKAMURA)
- Backport changed from 2.0.0: REQUIRED, 2.1: DONE to 2.0.0: DONE, 2.1: DONE

backported into ruby_2_0_0 at r47367.

#5 - 10/06/2014 08:57 AM - ReiOdaira (Rei Odaira)
I am not familiar with autoconf, but shouldn't this be ac_cv_func_posix_fadvise, not ac_cv_posix_fadvise?

--- configure.in (revision 47818)
+++ configure.in (working copy)
@@ -1207,7 +1207,7 @@
   # AIX currently does not support a 32-bit call to posix_fadvise()
   # if _LARGE_FILES is defined.
   - ac_cv_posix_fadvise=no
+ ac_cv_func_posix_fadvise=no

}}

#6 - 10/06/2014 09:08 AM - nobu (Nobuyoshi Nakada)

Exactly.
Please fix it.

#7 - 10/06/2014 02:57 PM - nagachika (Tomoyuki Chikanaga)
- Backport changed from 2.0.0: DONE, 2.1: DONE to 2.0.0: REQUIRED, 2.1: REQUIRED

#8 - 10/15/2014 07:12 AM - usa (Usaku NAKAMURA)
- Backport changed from 2.0.0: REQUIRED to 2.0.0: DONE, 2.1: REQUIRED

Backported into ruby_2_0_0 at r47933.

#9 - 10/15/2014 02:09 PM - nagachika (Tomoyuki Chikanaga)
- Backport changed from 2.0.0: DONE, 2.1: REQUIRED to 2.0.0: DONE, 2.1: DONE
Backported r47819 into ruby_2_1 at r47945.