

## Redmine - Defect #30411

### Filesystem adapter does not show correct size for large files

2019-01-11 23:44 - Felix Schäfer

<b>Status:</b>	Closed	<b>Start date:</b>	
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Jean-Philippe Lang	<b>% Done:</b>	0%
<b>Category:</b>	SCM	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	4.0.2	<b>Affected version:</b>	4.0.0
<b>Resolution:</b>	Fixed		
<b>Description</b>			
We have a couple of large files (~9GB) which size doesn't show correctly.			
I suspect <a href="https://source/tags/4.0.0/lib/redmine/scm/adapters/filesystem_adapter.rb#L84">source/tags/4.0.0/lib/redmine/scm/adapters/filesystem_adapter.rb#L84</a> , the conversion to a signed 32-bit Integer ( <a href="https://apidock.com/ruby/Array/pack">https://apidock.com/ruby/Array/pack</a> ), to introduce errors for file sizes that are a little over 2GB.			
Changing l and L to q and Q should solve the problem.			
<b>Related issues:</b>			
Related to Redmine - Defect #12279: error with large files in filesystem repo		Closed	

#### Associated revisions

##### Revision 17831 - 2019-01-20 08:39 - Jean-Philippe Lang

Filesystem adapter does not show correct size for large files (#30411).

##### Revision 17832 - 2019-01-20 08:40 - Jean-Philippe Lang

Merged r17831 to 4.0-stable (#30411).

##### Revision 17833 - 2019-01-20 08:40 - Jean-Philippe Lang

Merged r17831 to 3.4-stable (#30411).

#### History

##### #1 - 2019-01-12 07:13 - Go MAEDA

The expression "[File.size(target)].pack('l').unpack('L').first" was introduced in [r1509](#).

According to the commit log, the purpose of the expression is to fix the issue that the adapter shows a negative value for large files under Win32. Maybe it returns -2147483648 for a file with 2GB size and -1 for a file with (4G - 1) bytes. The expression converts -2147483648 and -1 to 2147483648 and 4294967295.

However, if we change the 'l' and 'L' to 'q' and 'Q', -2147483648 and -1 are converted to 18446744071562067968 and 18446744073709551615 (correct values are 2147483648 and 4294967295). So, I think we have to fix this issue in a different way.

The following patch should fix the problem. It converts the value using pack and unpack only if File.size returns negative value.

```
Index: lib/redmine/scm/adapters/filesystem_adapter.rb
=====
--- lib/redmine/scm/adapters/filesystem_adapter.rb      (revision 17791)
+++ lib/redmine/scm/adapters/filesystem_adapter.rb      (working copy)
@@ -76,12 +76,16 @@
     not File.basename(e1).match(/^\.+$/) # avoid . and ..
     p1 = File.readable?(t1) ? relative_path : ""
     utf_8_path = scm_iconv('UTF-8', @path_encoding, p1)
+    size = File.directory?(t1) ? nil : File.size(t1)
+    # File#size returns a negative value under Win32 when
+    # the file size is >= 2GB and < 4GB
+    size = [size].pack('l').unpack('L').first if size.to_i < 0
     entries <<
       Entry.new({ :name => scm_iconv('UTF-8', @path_encoding, File.basename(e1)),
                  # below : list unreadable files, but dont link them.
                  :path => utf_8_path,
                  :kind => (File.directory?(t1) ? 'dir' : 'file'),
-                  :size => (File.directory?(t1) ? nil : [File.size(t1)].pack('l').unpack('L').first),
```

```
+      :size => size,  
      :lastrev =>  
        Revision.new({:time => (File.mtime(t1)) })  
    })
```

## #2 - 2019-01-12 07:14 - Go MAEDA

- Category set to SCM
- Target version set to 3.4.8

## #3 - 2019-01-13 16:04 - Go MAEDA

- Related to Defect #12279: error with large files in filesystem repo added

## #4 - 2019-01-19 11:54 - Jean-Philippe Lang

- Target version changed from 3.4.8 to Candidate for next minor release

Felix, can you confirm the fix is OK?

## #5 - 2019-01-19 16:13 - Felix Schäfer

I can confirm the patch still shows the correct file size for the file that caused problems in our case.

The error the patch in [r1509](#) addresses intrigued me though to I went looking if maybe this was due to a bug in Ruby that was since fixed. Searching on the ruby-lang bug tracker yielded the following result <https://bugs.ruby-lang.org/issues/2671>

My understanding is that the Ruby bug that caused files above 2GB to be shown as negative File.size values has been fixed in Ruby 1.9. I have searched the ruby git repository for clues but unfortunately I was not able to find a corresponding commit or commit message.

I have however tested the value of File.size for a file that has a size just under 4GB for Ruby 2.5, Ruby 1.9 and Ruby 1.8 on Windows 10. Ruby 1.8 will show a negative file size, while Ruby 1.9 and Ruby 2.5 show the correct file size.

As current Redmine versions require at least Ruby 1.9 I think we can remove this work-around altogether.

## #6 - 2019-01-20 08:06 - Jean-Philippe Lang

- Target version changed from Candidate for next minor release to 4.0.2

Thanks!

## #7 - 2019-01-20 08:40 - Jean-Philippe Lang

- Status changed from New to Closed
- Assignee set to Jean-Philippe Lang
- Resolution set to Fixed