

# Redmine - Patch #29359

## Switch to mini\_mime from mime-types

2018-08-10 21:44 - Pavel Rosický

<b>Status:</b>	Closed	<b>Start date:</b>	
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Go MAEDA	<b>% Done:</b>	0%
<b>Category:</b>	Performance	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	4.0.0		

### Description

Redmine uses unbound cache for mime types which is eliminated now. Also mime-types is too heavy and Redmine uses only a tiny piece of it, we just need a simple ext -> mime lookup.

<https://github.com/mikel/mail/pull/1059> (mail 2.6.x still uses mime-types)

<https://github.com/teamcapybara/capybara/pull/1884>

```
require 'benchmark/ips'
```

```
Benchmark.ips do |x|  
  x.report('known') { Redmine::MimeType.of("file.patch") }  
  x.report('not known') { Redmine::MimeType.of("file.zip") }  
end
```

```
trunk  
  known 284.431k (± 1.9%) i/s - 1.422M in 5.002378s  
  not known 285.699k (± 3.0%) i/s - 1.446M in 5.065113s
```

```
patch  
  known 657.114k (± 1.8%) i/s - 3.327M in 5.064494s  
  not known 392.574k (± 2.2%) i/s - 1.965M in 5.006827s
```

```
boot allocations boot retained  
mime-types 109796 31165  
mini_mime 398 62
```

what do you think?

### Related issues:

Related to Redmine - Defect # 29365: MailHandlerTest#test_add_issue_with_loca...	<b>Closed</b>
Related to Redmine - Patch # 29383: Update mini_mime gem (~> 1.0.1)	<b>Closed</b>
Related to Redmine - Feature # 29443: Update mail gem (~> 2.7.1)	<b>Closed</b>

### Associated revisions

**Revision 17468 - 2018-08-13 01:37 - Go MAEDA**

Replace mime-types gem with more efficient mini\_mime gem (#29359).

Contributed by Pavel Rosický.

**Revision 17470 - 2018-08-13 13:38 - Go MAEDA**

Don't require mime-types (#29359).

**Revision 17471 - 2018-08-15 03:23 - Go MAEDA**

Test that Redmine::MimeType.of is case-insensitive (#29359).

**Revision 17472 - 2018-08-15 15:20 - Go MAEDA**

Test that Redmine::MimeType.css\_class\_of, main\_mimetype\_of and is\_type? are case-insensitive (#29359).

**Revision 17473 - 2018-08-15 16:01 - Go MAEDA**

Refactor Redmine::MimeType.of. Uses MiniMime.lookup\_by\_extension instead of lookup\_by\_filename (#29359).

**History**

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**#1 - 2018-08-11 08:03 - Go MAEDA**

- File *replace-mime-types-with-mini\_mime.diff* added
- Category changed from *Gems support* to *Performance*

Thank you for posting the interesting improvement.

Your patch is very fast, but I think an application should not have codes which rely on the internal structure of third-party libraries. Your patch accesses mini\_mime's instance variable '@db'.

I updated your patch not to manipulate an internal variable of mini\_mime. It is 15% slower than your patch but 70% faster than the current Redmine::MimeType.of.

without patches:

known	226.301k (± 5.0%) i/s -	1.131M in	5.010006s
unknown	225.491k (± 4.6%) i/s -	1.131M in	5.024550s

replace-mime-types-with-mini\_mime.diff: (faster):

known	382.020k (± 6.2%) i/s -	1.923M in	5.052268s
unknown	382.602k (± 6.6%) i/s -	1.908M in	5.008955s

mime\_type.rb.patch by Pavel Rosický (fastest):

known	431.349k (± 5.4%) i/s -	2.167M in	5.038918s
unknown	432.307k (± 5.5%) i/s -	2.172M in	5.040046s

## #2 - 2018-08-11 08:27 - Go MAEDA

Sorry, there was a problem with my benchmark script. After fixing the problem, I found that my patch is very slow for unknown extensions.

without patches:

```
known 170.009k (± 7.2%) i/s - 859.560k in 5.083952s
unknown 169.572k (± 6.2%) i/s - 844.816k in 5.000900s
```

replace-mime-types-with-mini\_mime.diff:

```
known 244.827k (± 5.3%) i/s - 1.228M in 5.031343s
unknown 79.055k (± 5.5%) i/s - 394.128k in 5.000338s
```

mime\_type.rb.patch by Pavel Rosický:

```
known 256.660k (± 5.7%) i/s - 1.291M in 5.047902s
unknown 150.151k (± 5.5%) i/s - 753.483k in 5.033494s
```

```
require 'benchmark/ips'
require 'mini_mime'
require './lib/redmine/mime_type'
```

```
Benchmark.ips do |x|
  x.report('known') { Redmine::MimeType.of('file.txt') }
  x.report('unknown') { Redmine::MimeType.of('file.zip') }
end
```

## #3 - 2018-08-11 09:37 - Go MAEDA

- File *replace-mime-types-with-mini\_mime-v2.diff* added

I updated my patch to preserve existing cache mechanism. Now it is fast also for unknown extensions.

```
known 232.028k (± 4.9%) i/s - 1.170M in 5.052806s
unknown 236.938k (± 4.6%) i/s - 1.199M in 5.071712s
```

## #4 - 2018-08-11 09:42 - Pavel Rosický

Lets ask sam saffron if he could add it to the public api.

**#5 - 2018-08-11 10:02 - Pavel Rosický**

@known\_types is a class variable. There're two problems:

It isn't threadsafe.

It's unlimited and because it's related to user's actions it could grow indefinitely. This memory won't be released. That's why I was trying to avoid it or limit it. Minimime has the upper bound for caches. Please correct me if I'm wrong.

**#6 - 2018-08-12 09:10 - Go MAEDA**

Pavel Rosický wrote:

*@known\_types is a class variable. There're two problems:*

*It isn't threadsafe.*

*It's unlimited and because it's related to user's actions it could grow indefinitely. This memory won't be released.*

Although the patch still has the same problem with the current implementation, simply replacing mime-types with mini\_mime will reduce memory usage and improve performance.

I suggest that we discuss the problem as a new issue, after committing the patch. Is it OK with you?

**#7 - 2018-08-12 09:24 - Pavel Rosický**

It's ok, thanks

**#8 - 2018-08-12 09:58 - Go MAEDA**

- Subject changed from Switch to mini\_mime to Switch to mini\_mime from mime-types

- Target version set to 4.1.0

**#9 - 2018-08-12 11:43 - Go MAEDA**

- File replace-mime-types-with-mini\_mime-v3.diff added

**#10 - 2018-08-13 01:37 - Go MAEDA**

- Status changed from New to Closed

- Assignee set to Go MAEDA

Committed. Thank you for your contribution.

**#11 - 2018-08-13 01:45 - Go MAEDA**

- Target version changed from 4.1.0 to 4.0.0

**#12 - 2018-08-13 01:56 - Go MAEDA**

- Related to Defect #29365: MailHandlerTest#test\_add\_issue\_with\_localized\_attributes fails with mail gem 2.7.0 added

**#13 - 2018-08-13 11:18 - Pavel Rosický**

please also remove

require 'mime/types'

**#14 - 2018-08-13 11:28 - Marius BALTEANU**

- Status changed from Closed to Reopened

**#15 - 2018-08-13 13:39 - Go MAEDA**

- Status changed from Reopened to Closed

Pavel Rosický wrote:

```
| please also remove  
| [...]
```

Committed. Thanks.

**#16 - 2018-08-14 12:09 - Go MAEDA**

- File 29359-remove-known-types-hash.patch added

- Status changed from Closed to Reopened

mini\_mime 1.0.1 supports lookup\_by\_extension. We can remove the cache mechanism using known\_types hash by making use of the new method. Attaching a patch to remove the hash.

Even without the cache mechanism, Redmine::MimeTypes.of is faster than the original code.

r17467 (before applying replace-mime-types-with-mini\_mime-v3.diff):

```
Warming up -----  
  known  20.028k i/100ms  
 unknown 12.677k i/100ms  
Calculating -----  
  known  246.855k (± 6.0%) i/s - 1.242M in 5.049235s  
 unknown 138.044k (± 5.9%) i/s - 697.235k in 5.068005s
```

with the patch 29359-remove-known-types-hash.patch:

```
Warming up -----  
  known  20.249k i/100ms  
 unknown 11.787k i/100ms  
Calculating -----  
  known  264.152k (± 8.0%) i/s - 1.316M in 5.015411s  
 unknown 142.650k (± 8.6%) i/s - 719.007k in 5.076025s
```

## #17 - 2018-08-14 13:18 - Pavel Rosický

29359-remove-known-types-hash.patch - .downcase shouldn't be removed, both EXTENSIONS[] and lookup\_by\_extension expect lower-case and the benchmark looks odd, in r17467 both known/unknown scenarios were cached in a class var, so I would expect similar performance

## #18 - 2018-08-14 17:19 - Go MAEDA

- File 29359-remove-known-types-hash-v2.patch added

Pavel Rosický wrote:

```
| 29359-remove-known-types-hash.patch - .downcase shouldn't be removed, both EXTENSIONS[] and lookup_by_extension expect lower-case
```

Fixed.

```
| and the benchmark looks odd, in r17467 both known/unknown scenarios were cached in a class var, so I would expect similar performance
```

You are right. Maybe I pasted a wrong result. The following results are correct ones. Redmine::MimeType.of will be faster than r17467 in many cases.

r17467 (before switching to mini\_mime):

```
found in array (file.patch)
    164.476k (± 6.5%) i/s - 832.300k in 5.081748s
found in gem (file.zip)
    167.251k (± 5.7%) i/s - 841.580k in 5.047872s
not found in gem (file.go)
    168.700k (± 5.7%) i/s - 851.440k in 5.063132s
```

with the patch:

```
found in array (file.patch)
    418.181k (± 6.0%) i/s - 2.099M in 5.036624s
found in gem (file.zip)
    183.820k (± 6.9%) i/s - 923.232k in 5.047995s
not found in gem (file.go)
    147.241k (± 6.7%) i/s - 734.046k in 5.007225s
```

benchmark script:

```
require 'benchmark/ips'
require 'mini_mime'
require './lib/redmine/mime_type'
```

```
Benchmark.ips do |x|
  x.report('found in array (file.patch)') { Redmine::MimeType.of('file.patch') }
  x.report('found in gem (file.zip)') { Redmine::MimeType.of('file.zip') }
```

```
x.report('not found in gem (file.go)') { Redmine::MimeType.of('file.go') }  
end
```

#### #19 - 2018-08-14 17:53 - Pavel Rosický

my results (ruby 2.5.0):

with the patch (mini\_mime)

```
found in array (file.patch)  
    1.079M (± 1.9%) i/s - 5.407M in 5.011560s  
found in gem (file.zip)  
    486.991k (± 2.6%) i/s - 2.456M in 5.047320s  
not found in gem (file.go)  
    428.810k (± 2.3%) i/s - 2.174M in 5.072125s
```

r17467 (mime\_types)

```
found in array (file.patch)  
    293.348k (± 1.6%) i/s - 1.477M in 5.035304s  
found in gem (file.zip)  
    295.426k (± 1.8%) i/s - 1.500M in 5.080399s  
not found in gem (file.go)  
    293.534k (± 5.3%) i/s - 1.477M in 5.048996s
```

r17467 (mime\_types without @known\_types cache)

```
found in array (file.patch)  
    298.984k (± 5.2%) i/s - 1.499M in 5.027456s  
found in gem (file.zip)  
    60.804k (± 1.6%) i/s - 304.803k in 5.014262s  
not found in gem (file.go)  
    65.405k (± 2.9%) i/s - 332.575k in 5.089481s
```

#### #20 - 2018-08-15 02:09 - Go MAEDA

- Related to Patch #29383: Update mini\_mime gem (~> 1.0.1) added

#### #21 - 2018-08-15 16:02 - Go MAEDA

- Status changed from Reopened to Closed

Committed 29359-remove-known-types-hash-v2.patch.

**#22 - 2018-08-27 13:54 - Go MAEDA**

- Related to Feature #29443: Update mail gem (~> 2.7.1) added

**Files**

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Gemfile.patch	381 Bytes	2018-08-10	Pavel Rosický
mime_type.rb.patch	1.43 KB	2018-08-10	Pavel Rosický
replace-mime-types-with-mini_mime.diff	1.38 KB	2018-08-11	Go MAEDA
replace-mime-types-with-mini_mime-v2.diff	1.17 KB	2018-08-11	Go MAEDA
replace-mime-types-with-mini_mime-v3.diff	1.14 KB	2018-08-12	Go MAEDA
29359-remove-known-types-hash.patch	1.13 KB	2018-08-14	Go MAEDA
29359-remove-known-types-hash-v2.patch	1.14 KB	2018-08-14	Go MAEDA