

## Redmine - Feature #26791

### Send individual notification mails per mail recipient

2017-08-30 12:46 - Holger Just

<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>	Email notifications	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	4.0.0		
<b>Resolution:</b>	Fixed		

#### Description

With this patch series, we are introducing the general concept to send multiple mails per notification event. Specifically, we are sending one mail per recipient user. Each of those mails is rendered in the context of the recipient (i.e. with `User.current` set to the recipient). The mails can be sent immediately or optionally delayed using `ActiveJob`.

This approach has a couple of advantages over the existing approach of sending a single mail to multiple recipients:

- We ensure object visibility for the rendered mails in the most generic way. Since each mail is rendered with `User.current` set to the recipient, all content rendered in the mail (including shown issue attributes, macros and links in rendered textile text, ...) is guaranteed to only be visible to the user without having to ensure this manually for each mail using the same visibility rules as used for the HTML views already.
- The mail will always be sent in the recipients language, even if multiple users with different languages are notified
- There is no risk of the whole notification mail being rejected because of a single invalid recipient address (see #8157, #6829, #8733 and a lot of duplicates)

In the long run, it will also allow us to introduce user-specific additional information in the rendered notification, e.g. related issues, links to assign the issue, ...

With this new approach, we do have a some challenges which we are trying to address separately:

- Since each mail is always rendered with an adapted `User.current`, any mail views which expected to use the original `User.current` need to be adapted. In Redmine core, this only affects the security notifications.
- Depending on the number of recipients for a notification, there might be many rendered mails which can take some time in the request. To ensure a snappy response, we can use `ActiveJob` to render and send the mails in the background. This can make the `async_*` delivery methods obsolete.

#### Reminder: How mail sending works in plain Rails (and Redmine)

This patch series changes how mails are generated and delivered. Let's first look at how a mail normally gets generated and delivered in `ActionMailer`.

- `mail = Mailer.news_added(news)` - The user calls a class-method of the `Mailer` class (a child-class of `ActionMailer::Base`). This method is usually not implemented in the `Mailer` class itself. Instead, there is a [method missing](#) method on `ActionMailer::Base`. Here, `ActionMailer` creates a `ActionMailer::MessageDelivery` object. Which is basically a delegator to an *eventually rendered* mail object. Now, the mail is not actually rendered here. The `MessageDelivery` object only collects all arguments it needs to eventually render the mail. This happens implicitly when any method on the mail is accessed (e.g. when the mail is about to be delivered). The `MessageDelivery` delegator is returned to the user.

Now that we have the (delegated) mail, we can deliver it with `mail.deliver`. This method used to be the only delivery method. With newer Rails versions, there is (with some variations) `deliver_now` and `deliver_later`. Redmine usually calls `deliver` which in `source:trunk/config/initializers/10-patches.rb#L160` calls `deliver_now` currently.

When calling `mail.deliver`, the delegator starts to render the mail:

- [MessageDelivery#processed\\_mailer](#) creates a new `Mailer` instance and calls `process` on it.
- `Mailer#process(:news_added, news)` - The `process` method is part of `ActionMailer` (and in turn part of the `ActionController`)

framework on which ActionMailer is based on). Among things, it calls the specified action, i.e. the instance method.

- `Mailer#news_added(news)` - This instance method is implemented on the Mailer class and is responsible to render the actual mail message. Here, we set headers, instance variables for the view and basically do the usual controller stuff. With a final call to `mail`, we eventually render a single mail and return a `Mail::Message` object.

- This returned `Mail::Message` object is delivered with a call to `Mail::Message#deliver_now`.

## How we hook into this process

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Now, in order to send multiple mails, we hook into this process to render (and deliver) multiple mails. We want to ensure two things:

- We want to create multiple mails, one per recipient and deliver them all in one go.
- When rendering the mail (i.e. when calling the Mailer's instance method), we want to set `User.current` to the recipient user and set it back to the original value after the rendering is done

These two goals are achieved with two specific changes to our Mailer:

We introduce a wrapper class called `Mailer::MultiMessage`. Instances of this class wrap multiple `Mail::Message` objects (or rather `ActionMailer::MessageDelivery` objects which delegate to `Mail::Message` objects). The class provides the same `deliver_*` methods as the original `Mail::Message` objects. When calling such a method, we are calling it on each of the wrapped messages. This allows us to use an instance of this class in place of a `ActionMailer::MessageDelivery` object.

We use this class by implementing *class methods* for each mailer action. These class methods implement the same external interface (i.e. accept the same arguments) as the old instance methods. This ensures that we keep the existing public interface. The class methods fetch the recipient users for the respective object (i.e. the issue, news, comment, ...). We use `Mailer::MultiMessage#for` to add an `ActionMailer::MessageDelivery` object for each recipient which eventually renders the mail.

When creating the delegator, we also pass the recipient user to the arguments for the mail rendering. We use this user in the overwritten `Mailer#process` method to set `User.current` and their language before actually rendering the message. This convention allows us to keep the interfaces clear: the user is only passed between the class method and `Mailer#process` but doesn't need to be specified on the instance action. Here, it is already set as `User.current` for each rendered mail.

We also extend `Mailer.method_missing` (on the class) to create a single-mail `Mailer::MultiMessage` object with the current user in case the class method for an action is not explicitly overwritten. This ensures that our convention of always passing a user to `Mailer#process` is kept up even if a plugin only adds an instance method (which was valid before).

## What we tried and did not work

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I first attempted to set the current user directly in the action's class method. and reset it directly afterwards. That would have made the code much more localized. However, due to the delayed rendering of the mail with the `ActionMailer::MessageDelivery` object, the mail will be rendered only after we have already reset the current user.

One way to work around this would be to introduce `deliver_*` methods (like the now obsolete `Mailer.deliver_issue_add` method). However doing so would have changed the intended external interface of our Mailer class and would likely lead to integration pain with all existing Redmine plugins sending mail.

## What we ship

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We ship three patches here:

- `0001-Send-individual-emails-for-each-mail-recipient.patch` - The main implementation including tests.
- `0002-Cleanup-Remove-Issue-each_notification-and-Journal-e.patch` - Removes unnecessary methods for grouping recipients based on custom field visibility
- `0003-Optional-Ensure-that-ActiveRecord-Base-objects-are-f.patch` - An optional patch which changes the serialization behavior when sending mails with `ActiveJob` (e.g. with `Mailer.news_added(news).deliver_later`). By default, Rails serialized the arguments as a globalid (which is basically a reference to the object in the database identified by its ID). If there are concurrent changes to e.g. a newly created issue, this might result in notifications using the new state instead of the original state. With this patch, we serialize the exact attributes of the given objects into the job. Since this also causes nested attributes to be serialized along, care must be taken to avoid reference errors. In general, we should probably try to use mostly immutable state in the database where it is an important consideration that the notification state is exactly shown in the DB.

## Future work

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### ActiveJob sending

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If the general direction of this patch is accepted, it is probably desirable to move the mail sending to `ActiveJob` completely. This could

replace the `async_*` delivery methods `[[EmailConfiguration#Asynchronous-delivery_methods|currently configurable]]` in `configuration.yml`. This change can either be hardcoded in `source:trunk/config/initializers/10-patches.rb#L160` or made configurable with a setting. I'll be glad to provide a patch for this. It would only be a few lines of code.

By default, we could use the in-process `ActiveJob` runner to send mails. More advanced users with a dedicated job worker (e.g. delayed job) can easily switch to that without changes to the Redmine code itself.

## BCC recipients

Since each user gets their own mail, we can probably remove the setting to send mails with BCC completely. If plugins want to send mails to non-user recipients, we would have to make sure to either set the recipients manually on BCC or group them appropriately. It is not a required setting in Redmine core anymore though.

### Related issues:

Related to Redmine - Defect # 8157: Redmine do not send notification emails i...	Closed	
Related to Redmine - Feature # 5990: Email notification should reflect user l...	Closed	2010-07-29
Related to Redmine - Defect # 17096: Issue emails cannot be threaded by some ...	Closed	
Related to Redmine - Defect # 27242: issue creation failed if email notificat...	Closed	
Related to Redmine - Defect # 11106: Email notification processing is slow - ...	Closed	
Related to Redmine - Defect # 8137: HTML email doesn't obey directionality of...	Closed	2011-04-13
Related to Redmine - Defect # 5703: On SMTP failure, an internal error occurs...	Closed	2010-06-17
Related to Redmine - Feature # 28338: Make Redmine Email Delivery compatible ...	Closed	
Related to Redmine - Defect # 16784: Notifications not sent when receiving em...	Closed	
Related to Redmine - Feature # 30068: Remove <code>:async_smtp</code> and <code>:async_sendmail</code> ...	Closed	
Related to Redmine - Defect # 26010: can't create Thread	Closed	
Related to Redmine - Defect # 30787: Other recipients are not listed in To fi...	Closed	
Related to Redmine - Feature # 30820: Drop setting "Blind carbon copy recipie...	Closed	
Related to Redmine - Feature # 32781: [Mail Notifications] (feature back) all...	Closed	
Related to Redmine - Patch # 36005: Adopt 2FA emails to new Mailer interface	Closed	
Duplicated by Redmine - Feature # 4231: Send email notifications one by one	Closed	2009-11-17
Duplicated by Redmine - Defect # 11981: Redmine send mail fail when project h...	Closed	
Duplicated by Redmine - Feature # 32291: Need some patch to enable emails queue	Closed	
Blocks Redmine - Feature # 2496: Per user email format settings (HTML/plain t...	New	2009-01-13

## Associated revisions

### Revision 17583 - 2018-10-06 15:08 - Jean-Philippe Lang

Send individual emails for each mail recipient (#26791).

We are creating multiple mails per class notification event, one per recipient, wrapped in a `Mailer::MultiMessage` object to send them all at once.

We keep the existing interface of all class methods intended to be used by external code the same as they were before, with one exception:

We provide additional recipient addresses in `options[:recipients]` for `Mailer.security_notification`. Since the first-class recipients have to be users to render individual mails for them, additional recipient addresses have to be provided with some other channel.

By providing additional recipients in `options[:recipients]`, we can solve the use-case for address change notifications for users, which probably is the only real use-case for having to use a plain email address instead of a `User` as a notification recipient.

Patch by Holger Just and Marius BALTEANU.

**Revision 17584 - 2018-10-06 15:09 - Jean-Philippe Lang**

Cleanup: Remove Issue#each\_notification and Journal#each\_notification (#26791).

Patch by Holger Just.

**Revision 17585 - 2018-10-06 15:10 - Jean-Philippe Lang**

Ensure that ActiveRecord::Base objects are fully serialized for mail sending (#26791).

Patch by Holger Just.

**Revision 17587 - 2018-10-06 18:07 - Jean-Philippe Lang**

Fixed that test\_email raises an error with #deliver\_later (#26791).

**Revision 17588 - 2018-10-10 19:13 - Jean-Philippe Lang**

Send emails asynchronously (#26791).

Custom async\_\* delivery methods are removed in favor of ActiveJob (Async by default).

**Revision 17590 - 2018-10-10 20:45 - Jean-Philippe Lang**

Replaces remaining #deliver with #deliver\_later (#26791).

**Revision 17591 - 2018-10-10 21:04 - Jean-Philippe Lang**

Removes method\_missing override (#26791).

**Revision 17668 - 2018-12-01 07:45 - Go MAEDA**

Use "abort" instead of "exit" in order to make error log more informative (# 26791).

## History

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**#2 - 2017-08-30 16:58 - Jan from Planio [www.plan.io](http://www.plan.io)**

- Related to Defect #8157: Redmine do not send notification emails if a recipients email address is not valid added

**#3 - 2017-08-31 04:41 - Go MAEDA**

- Related to Defect #11981: Redmine send mail fail when project has too much members added

**#4 - 2017-09-03 08:30 - Go MAEDA**

- Related to Feature #5990: Email notification should reflect user language setting added

**#5 - 2017-09-04 14:04 - Go MAEDA**

- *Blocks Feature #2496: Per user email format settings (HTML/plain text) added*

**#6 - 2017-09-08 09:54 - Go MAEDA**

- *Related to Defect #17096: Issue emails cannot be threaded by some mailers due to inconsistent Message-ID and References field added*

**#7 - 2017-09-29 06:44 - Toshi MARUYAMA**

- *Description updated*

**#8 - 2017-10-19 21:32 - Juan Diego Iannelli**

+1

**#9 - 2017-10-21 09:26 - Go MAEDA**

- *Related to Defect #27242: issue creation failed if email notification fail added*

**#10 - 2017-11-04 06:49 - Go MAEDA**

- *Target version set to 4.1.0*

This patch can fix many annoying behaviors related to email notification (see "Related issues"). Setting target version to 4.1.0.

**#11 - 2017-11-04 06:59 - Go MAEDA**

- *Related to Defect #11106: Email notification processing is slow - Redmine 1.2.2 added*

**#12 - 2017-11-26 05:28 - Go MAEDA**

- *Related to Defect #8137: HTML email doesn't obey directionality of locale added*

**#13 - 2018-03-31 10:07 - Go MAEDA**

- *Related to Defect #5703: On SMTP failure, an internal error occurs and all changes to an issue are lost added*

**#14 - 2018-04-03 02:39 - Go MAEDA**

- *Related to Feature #28338: Make Redmine Email Delivery compatible with ActiveJob added*

**#15 - 2018-04-24 09:59 - Go MAEDA**

- *Target version changed from 4.1.0 to 4.0.0*

**#16 - 2018-05-22 14:21 - Enziin System**

After applying the patch and edit: /config/initializers/10-patches.rb

```
module ActionMailer
  class MessageDelivery < Delegator
    def deliver
      deliver_later
    end
  end
end
```

I get an error when updating an issue.

Started PATCH "/issues/2" for 127.0.0.1 at 2018-05-23 04:38:23 +0000

Processing by IssuesController#update as HTML

Parameters: {"utf8"=>"",...}

...

[ActiveJob] [ActionMailer::DeliveryJob] [a5d3c247-2e7a-4879-aaad-d0590de9026b] Performing ActionMailer::DeliveryJob (Job ID: a5d3c247-2e7a-4879-aaad-d0590de9026b) from Async(mailers) with arguments: "Mailer", "issue\_edit", "deliver\_now", #<GlobalID:0x00007fa2d053b888 @uri=#<URI::GID gid://redmine-app/User/5>>, #<GlobalID:0x00007fa2d053af28 @uri=#<URI::GID gid://redmine-app/Journal/8>>

[ActiveJob] [ActionMailer::DeliveryJob] [a5d3c247-2e7a-4879-aaad-d0590de9026b] Error performing ActionMailer::DeliveryJob (Job ID: a5d3c247-2e7a-4879-aaad-d0590de9026b) from Async(mailers) in 0.15ms: ArgumentError (wrong number of arguments (given 2, expected 1)):

.../app/models/mailer.rb:246:in `issue\_edit'

#### #17 - 2018-09-10 23:12 - Ken Zalewski

Is there a plan to get this patch merged into the core code base?

#### #18 - 2018-09-11 08:18 - Bernhard Rohloff

Ken Zalewski wrote:

| *Is there a plan to get this patch merged into the core code base?*

It's on the roadmap for version:4.0.0 so I think there is a plan. ;-)

#### #19 - 2018-09-15 09:49 - Go MAEDA

- Duplicated by Feature #5821: Respond to unprocessed emails added

#### #20 - 2018-09-15 09:50 - Go MAEDA

- Duplicated by deleted (Feature #5821: Respond to unprocessed emails)

#### #21 - 2018-09-15 09:50 - Go MAEDA

- Duplicated by Feature #4231: Send email notifications one by one added

#### #22 - 2018-09-29 09:55 - Jean-Philippe Lang

Because of r17269, the patch does not apply cleanly. Could you update it so we can commit this change? Thanks.

#### #23 - 2018-09-29 23:46 - Marius BALTEANU

- File 0001-Send-individual-emails-for-each-mail-recipient.patch added

I took the liberty to update the first patch to apply cleanly on the current trunk just in case of Holger Just or some else from Plan.io team do not have

the time to do it until the new release. All tests pass and the rest of the patches apply cleanly.

**#24 - 2018-09-30 11:13 - Jean-Philippe Lang**

Thank you Marius, but still I get many conflicts when trying to apply your patch on current trunk.

**#25 - 2018-09-30 11:14 - Marius BALTEANU**

Jean-Philippe Lang wrote:

| *Thank you Marius, but still I get many conflicts when trying to apply your patch on current trunk.*

Let me take a look, maybe I missed something.

**#26 - 2018-09-30 11:22 - Marius BALTEANU**

- File deleted (0001-Send-individual-emails-for-each-mail-recipient.patch)

**#27 - 2018-09-30 11:24 - Marius BALTEANU**

- File 0001-Send-individual-emails-for-each-mail-recipient\_v2.patch added

My last shot.

```
vagrant@jessie:/vagrant/project/redmine$ git log -1
commit 6e4deb6c10668b5432fc6990fa7e08a22208c18f
Author: Jean-Philippe Lang <jp_lang@yahoo.fr>
Date: Sun Sep 30 09:10:10 2018 +0000
```

Reverts unwanted change.

git-svn-id: <http://svn.redmine.org/redmine/trunk@17537> e93f8b46-1217-0410-a6f0-8f06a7374b81

```
vagrant@jessie:/vagrant/project/redmine$ patch -p1 < 0001-Send-individual-emails-for-each-mail-recipient_v2.patch
patching file app/models/email_address.rb
patching file app/models/mailer.rb
patching file app/views/mailer/security_notification.html.erb
patching file app/views/mailer/security_notification.text.erb
patching file app/views/mailer/settings_updated.html.erb
patching file app/views/mailer/settings_updated.text.erb
patching file test/functional/documents_controller_test.rb
patching file test/functional/issues_controller_test.rb
patching file test/functional/issues_custom_fields_visibility_test.rb
patching file test/functional/messages_controller_test.rb
patching file test/functional/news_controller_test.rb
patching file test/unit/changeset_test.rb
patching file test/unit/comment_test.rb
patching file test/unit/document_test.rb
patching file test/unit/issue_test.rb
patching file test/unit/journal_observer_test.rb
```

```
patching file test/unit/journal_test.rb
patching file test/unit/mail_handler_test.rb
patching file test/unit/mailer_test.rb
patching file test/unit/news_test.rb
patching file test/unit/repository_test.rb
patching file test/unit/wiki_content_test.rb
vagrant@jessie:/vagrant/project/redmine$
```

**#28 - 2018-10-01 17:25 - Marius BALTEANU**

- Assignee set to Holger Just

Holger, can you take a look to my updated patch or update your first patch to apply cleanly?

**#29 - 2018-10-01 21:35 - Jean-Philippe Lang**

Thanks Marius, your patch applies cleanly but I get a few test failures: IP address is blank in security notifications.

**#30 - 2018-10-01 22:54 - Marius BALTEANU**

Jean-Philippe Lang wrote:

*Thanks Marius, your patch applies cleanly but I get a few test failures: IP address is blank in security notifications.*

Sorry Jean-Philippe, I'm not sure how to fix the failing test and I need more time to investigate the problem by myself. I propose to postpone this ticket to version:"4.1.0" if Holger can't update the patch in a proper time. IMHO, I consider the release of version:"4.0.0" top priority.

**#31 - 2018-10-02 00:34 - Marius BALTEANU**

I looked again in the code and a fix that makes sense for me is the following one:

```
diff --git a/app/models/mailer.rb b/app/models/mailer.rb
index 717b000..fad1939 100644
--- a/app/models/mailer.rb
+++ b/app/models/mailer.rb
@@ -604,7 +604,7 @@ class Mailer < ActionMailer::Base
   value: options[:value]
 )
 @title = options[:title] && I(options[:title])
- @originator = options[:originator] || User.current
+ @originator = options[:originator] || sender
 @remote_ip = options[:remote_ip] || @originator.remote_ip
 @url = options[:url] && (options[:url].is_a?(Hash) ? url_for(options[:url]) : options[:url])
 redmine_headers 'Sender' => @originator.login
```

because sender is received from method self.security\_notification where is already defined as User.current.

Because of this, I think is safe also to remove the line 602 @user = User.current from method security\_notification.



```
diff --git a/app/models/mailer.rb b/app/models/mailer.rb
index fad1939ce..0e3f01483 100644
--- a/app/models/mailer.rb
+++ b/app/models/mailer.rb
@@ -598,7 +598,6 @@ class Mailer < ActionMailer::Base
  def security_notification(sender, options={})
    @sender = sender
    redmine_headers 'Sender' => sender.login
-   @user = User.current
    @message = I(options[:message],
      field: (options[:field] && I(options[:field])),
      value: options[:value])
```

The test MailerTest#test\_security\_notification (IP address is blank in security notifications.) passes now and the results for the entire tests suite look good on my environment (with the updated patch and the above two proposed fixes applied):

{{collapse(View test results)

Run options: --seed 34100

# Running:

```
.....
.....
.....
.....
.....
.....
.....F
```

Failure:

CalendarsControllerTest#test\_show [/work/test/functional/calendars\_controller\_test.rb:56]:  
Expected at least 1 element matching "img[class="gravatar"]", found 0..  
Expected 0 to be >= 1.

bin/rails test test/functional/calendars\_controller\_test.rb:35

Error:

GanttControllerTest#test\_gantt\_should\_export\_to\_png:  
Magick::ImageMagickError: non-conforming drawing primitive definition `text' @ error/draw.c/DrawImage/3265  
lib/redmine/helpers/gantt.rb:439:in `draw'  
lib/redmine/helpers/gantt.rb:439:in `to\_image'  
app/controllers/gantts\_controller.rb:42:in `block (2 levels) in show'  
app/controllers/gantts\_controller.rb:40:in `show'  
lib/redmine/sudo\_mode.rb:63:in `sudo\_mode'  
test/functional/gantts\_controller\_test.rb:153:in `test\_gantt\_should\_export\_to\_png'

bin/rails test test/functional/gantts\_controller\_test.rb:152

Finished in 451.992636s, 9.5909 runs/s, 63.0984 assertions/s.  
4335 runs, 28520 assertions, 1 failures, 1 errors, 2 skips

You have skipped tests. Run with --verbose for details.

```
}}
```

where:

1. CalendarsControllerTest#test\_show [/work/test/functional/calendars\_controller\_test.rb:56] fails also on the current trunk ([https://redmine.org/builds/logs/build\\_trunk\\_mysql\\_ruby-2.5\\_384.html](https://redmine.org/builds/logs/build_trunk_mysql_ruby-2.5_384.html))
2. "GanttControllerTest#test\_gantt\_should\_export\_to\_png" is caused by an issue on my local environment.

### #32 - 2018-10-02 17:31 - Marius BALTEANU

Marius BALTEANU wrote:

```
[...]
```

where: 1. CalendarsControllerTest#test\_show [/work/test/functional/calendars\_controller\_test.rb:56] fails also on the current trunk ([https://redmine.org/builds/logs/build\\_trunk\\_mysql\\_ruby-2.5\\_384.html](https://redmine.org/builds/logs/build_trunk_mysql_ruby-2.5_384.html))

I think that was an external problem because now the test passes on redmine.org and on my environment as well.

### #33 - 2018-10-02 21:34 - Holger Just

Thank you all for working on the patch and considering its inclusion!

I'll try to get to this tomorrow to fix any remaining test failures. Unfortunately, it's been a crazy week so far and I hadn't had much time so far...

### #34 - 2018-10-03 05:14 - Go MAEDA

- Related to Feature #12239: Translateable Notifications added

### #35 - 2018-10-06 18:14 - Jean-Philippe Lang

Holger Just wrote:

*If the general direction of this patch is accepted, it is probably desirable to move the mail sending to ActiveSupport completely. This could replace the async\_\* delivery methods [[EmailConfiguration#Asynchronous-delivery\_methods|currently configurable]] in configuration.yml. This change can either be hardcoded in source:trunk/config/initializers/10-patches.rb#L160 or made configurable with a setting. I'll be glad to provide a patch for this. It would only be a few lines of code.*

Yes, we should now use to ActiveSupport completely. I had to revert patch 0003 because it was raising an error when trying to send the test\_email with #deliver\_later (see the test added in r17587), something wrong with the serialization:

Error:

MailerTest#test\_test\_later:

```
ArgumentError: First argument has to be a user, was "--- !ruby/object:User\n  concise_attributes:\n  !ruby/object:ActiveModel::Attribute::FromDatabase\n    name: id\n    value_before_type_cast: 1\n  !ruby/object:ActiveModel::Attribute::FromDatabase\n    name: login\n    value_before_type_cast: admin\n  !ruby/object:ActiveModel::Attribute::FromDatabase\n    name: hashed_password\n    value_before_type_cast:\n    b5b6ff9543bf1387374cdfa27a54c96d236a7150\n  !ruby/object:ActiveModel::Attribute::FromDatabase\n    name: firstname\n    value_before_type_cast: Redmine\n  !ruby/object:ActiveModel::Attribute::FromDatabase\n  ...
```

**#36 - 2018-10-07 20:23 - Jean-Philippe Lang**

@Holger, have you an implementation of MultiMessage that is compatible with Async delivery?

Current trunk seems to be far from being compatible. I've spent a few hours on it and it just seems to be broken. For example, I tried to send settings\_updated notification asynchronously (see patch below), and only the current user is getting an email. Mailer.settings\_updated is called the first time with the array of admins, and then when the "real" notification is processed in the background, it's called with the current user as the first argument.

Please let me know if you have worked on it before I go on.

```
Index: app/models/mailer.rb
=====
--- app/models/mailer.rb (revision 17587)
+++ app/models/mailer.rb (working copy)
@@ -657,7 +657,7 @@
     return unless changes.present?

     users = User.active.where(admin: true).to_a
-   settings_updated(users, changes).deliver
+   settings_updated(users, changes).deliver_later
   end

   # Build a Mail::Message object with a test email for the current user
Index: app/models/setting.rb
=====
--- app/models/setting.rb (revision 17581)
+++ app/models/setting.rb (working copy)
@@ -131,7 +131,7 @@
     previous_value = Setting[name]
     set_from_params name, value
     if available_settings[name.to_s]['security_notifications'] && Setting[name] != previous_value
-   changes << name
+   changes << name.to_s
     end
   end
   if changes.any?
```

**#37 - 2018-10-09 22:00 - Jean-Philippe Lang**

*One way to work around this would be to introduce deliver\_\* methods (like the now obsolete Mailer.deliver\_issue\_add method). However doing so would have changed the intended external interface of our Mailer class and would likely lead to integration pain with all existing Redmine plugins sending mail.*

I understand that it would change the external interface of the Mailer but I think it's a better way to go than the trickier proposed solution. Maybe we should revert all the changes done here and postpone this feature in order not to delay 4.0 release.

**#38 - 2018-10-10 09:31 - Marius BALTEANU**

Jean-Philippe Lang wrote:

*One way to work around this would be to introduce deliver\_\* methods (like the now obsolete Mailer.deliver\_issue\_add method). However doing so would have changed the intended external interface of our Mailer class and would likely lead to integration pain with all existing Redmine plugins sending mail.*

*I understand that it would change the external interface of the Mailer but I think it's a better way to go than the trickier proposed solution. Maybe we should revert all the changes done here and postpone this feature in order not to delay 4.0 release.*

In my opinion, the safest option now (from many reasons) is to revert all the changes done and postpone this feature for version:"4.1.0".

**#39 - 2018-10-10 20:01 - Holger Just**

Sorry for the long silence from my part. It was rather busy at work recently and I had no further energy to work on this issue during the evenings. With that being said, thank you for working on this patch Marius and Jean--Philippe. I sincerely appreciate it.

In general, I tried to keep the external interface of the mailer (i.e. the interface used by all the rest of Redmine's code) as stable as possible. This resulted in some complications which I tried to solve with the MultiMailer. With my initial tests, I checked that it the MultiMailer compatible with redmine's existing async-\* delivery methods. I had not initially checked whether this works with ActiveJob. I do appreciate your work on moving over to it since it will help reduce special homegrown code in favor of upstream-maintained mechanisms.

Personally, I'm very fine with adding the deliver\_\* methods to the mailer. Since the methods signatures of the previously used Mailer methods change (because if the added user parameter), it should be apparent when some plugin is not yet upgraded since it will result in a load ArgumentError instead of silently swallowing notifications. Using the deliver\_\* class methods makes the whole implementation of the mailer much simpler.

Some comments to your last patch, Jean-Philippe:

- Do we still need Mailer#method\_missing? Since we are reverting on the deprecation, we should probably get rid of the fallback to avoid confusion.
- On some places in the Mailer class, you still directly call deliver. This seems to still work as an alias to deliver\_now but I have no idea why since you removed the patch in config/initializers/10-patches.rb. In any case, shouldn't the calls also be to deliver\_later?

**#40 - 2018-10-10 20:24 - Holger Just**

As for my third patch to adapt the serialization of the references objects for ActiveJob, this was more or less a proof-of concept to ensure that the full state of the notified object is encoded into the job. This would have caused side-effects if you are not very careful since it could also serialize nested ActiveRecord objects which might cause strange consistency issues if they differ from the state in the database.

I have attempted to test this when I wrote the patch and found no further issues, but I did not primarily test it to use ActiveJob's deliver\_later function yet. This was something I intended to further investigate once the general idea of the patch was accepted.

In general, I think it is desirable to not mess with the serialization at all and not use the third patch (which you have now reverted in r17587 already). Instead, we might try to make the objects used for rendering the mails (mostly) immutable over time. For issues an option could be to use "representer" objects instead of actual issues. These would be Structs (or similar) which could be serialized into the job and contain all necessary information to render the mail without having to rely in the current state of the issue object in the database.

What do you think?

**#41 - 2018-10-10 21:03 - Jean-Philippe Lang**

Marius BALTEANU wrote:

*In my opinion, the safest option now (from many reasons) is to revert all the changes done and postpone this feature for version:"4.1.0".*

That was the idea but I had some time to work on this and I finally decided to commit the changes.

Holger Just wrote:

*- Do we still need Mailer#method\_missing? Since we are reverting on the deprecation, we should probably get rid of the fallback to avoid confusion.*  
*- On some places in the Mailer class, you still directly call deliver. This seems to still work as an alias to deliver\_now but I have no idea why since you removed the patch in config/initializers/10-patches.rb. In any case, shouldn't the calls also be to deliver\_later?*

Thanks, this is fixed.

*In general, I think it is desirable to not mess with the serialization at all and not use the third patch (which you have now reverted in r17587 already). Instead, we might try to make the objects used for rendering the mails (mostly) immutable over time. For issues an option could be to use "representer" objects instead of actual issues. These would be Structs (or similar) which could be serialized into the job and contain all necessary information to render the mail without having to rely in the current state of the issue object in the database.*

That would be nice but we don't just need the issue and its attributes. Rendering the emails relies on many associations like attachments, custom fields. I'm afraid this solution would lead to different kind of problems. I'd happy to get some feedback anyway if you want to give it a try. Thanks.

**#42 - 2018-10-11 03:50 - Go MAEDA**

- Related to Defect #16784: Notifications not sent when receiving emails with rake task and async deliveries added

**#43 - 2018-11-29 17:40 - Jean-Philippe Lang**

- Tracker changed from Patch to Feature  
- Status changed from New to Closed  
- Assignee changed from Holger Just to Jean-Philippe Lang  
- Resolution set to Fixed

**#44 - 2018-11-30 11:21 - Go MAEDA**

- Related to deleted (Feature #12239: Translateable Notifications)

**#45 - 2018-11-30 14:05 - Marius BALTEANU**

- Related to deleted (Defect #11981: Redmine send mail fail when project has too much members)

**#46 - 2018-11-30 14:05 - Marius BALTEANU**

- Duplicated by Defect #11981: Redmine send mail fail when project has too much members added

**#47 - 2018-12-01 08:17 - Go MAEDA**

- Related to Feature #30068: Remove :async\_smtp and :async\_sendmail delivery methods added

**#48 - 2019-02-03 19:30 - Marius BALTEANU**

- Related to Defect #26010: can't create Thread added

**#49 - 2019-02-11 16:05 - Go MAEDA**

- Related to Defect #30787: Other recipients are not listed in To field even if Setting.bcc\_recipients is false added

**#50 - 2019-02-17 21:00 - Marius BALTEANU**

- Related to Feature #30820: Drop setting "Blind carbon copy recipients (bcc)" added

**#51 - 2019-02-17 21:05 - Marius BALTEANU**

Holger Just wrote:

***BCC recipients***

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*Since each user gets their own mail, we can probably remove the setting to send mails with BCC completely. If plugins want to send mails to non-user recipients, we would have to make sure to either set the recipients manually on BCC or group them appropriately. It is not a required setting in Redmine core anymore though.*

I've attached a patch to #30820 to drop the bcc setting.

**#52 - 2019-10-17 12:33 - Marius BALTEANU**

- Duplicated by Feature #32291: Need some patch to enable emails queue added

**#53 - 2020-01-12 19:56 - Marius BALTEANU**

- Related to Feature #32781: [Mail Notifications] (feature back) allow mails to be sent to multiple recipients at once added

**#54 - 2021-11-13 10:22 - Go MAEDA**

- Related to Patch #36005: Adopt 2FA emails to new Mailer interface added

**Files**

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0002-Cleanup-Remove-Issue-each_notification-and-Journal-e.patch	1.87 KB	2017-08-30	Holger Just
0001-Send-individual-emails-for-each-mail-recipient.patch	53.1 KB	2017-08-30	Holger Just
0003-Optional-Ensure-that-ActiveRecord-Base-objects-are-f.patch	1.88 KB	2017-08-30	Holger Just
0001-Send-individual-emails-for-each-mail-recipient_v2.patch	76.2 KB	2018-09-30	Marius BALTEANU