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Action Mailer Basics

This guide provides you with all you need to get started in sending and receiving emails from and to your application, and many internals of Action Mailer. It also covers how to test your mailers.

After reading this guide, you will know:

How to send and receive email within a Rails application.

How to generate and edit an Action Mailer class and mailer view. How to configure Action Mailer for your environment.

How to test your Action Mailer classes.

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1 Introduction

Action Mailer allows you to send emails from your application using mailer classes and views. Mailers work very similarly to controllers. They inherit from ActionMailer::Base and live in app/mailers, and they have associated views that appear in app/views.

2 Sending Emails

This section will provide a step-by-step guide to creating a mailer and its views.

2.1 Walkthrough to Generating a Mailer

2.1.1 Create the Mailer

```
$ bin/rails generate mailer UserMailer
create app/mailers/user_mailer.rb
create app/mailers/application_mailer.rb
invoke erb
create app/views/user_mailer
create app/views/layouts/mailer.text.erb
create app/views/layouts/mailer.html.erb
invoke test_unit
create test/mailers/user_mailer_test.rb
create test/mailers/previews/user mailer preview.rb
```

```
# app/mailers/application_mailer.rb
class ApplicationMailer < ActionMailer::Base
  default from: "from@example.com"
  layout 'mailer'
end

# app/mailers/user_mailer.rb
class UserMailer < ApplicationMailer
end</pre>
```

As you can see, you can generate mailers just like you use other generators with Rails. Mailers are conceptually similar to controllers, and so we get a mailer, a directory for views, and a test.

If you didn't want to use a generator, you could create your own file inside of app/mailers, just make sure that it inherits from ActionMailer::Base:

```
class MyMailer < ActionMailer::Base
end</pre>
```

2.1.2 Edit the Mailer

Mailers are very similar to Rails controllers. They also have methods called "actions" and use views to structure the content. Where a controller generates content like HTML to send back to the client, a Mailer creates a message to be delivered via email

app/mailers/user mailer.rb contains an empty mailer:

```
class UserMailer < ApplicationMailer
end</pre>
```

Let's add a method called welcome_email, that will send an email to the user's registered email address:

```
class UserMailer < ApplicationMailer
  default from: 'notifications@example.com'</pre>
```

```
def welcome_email
   @user = params[:user]
   @url = 'http://example.com/login'
   mail(to: @user.email, subject: 'Welcome to My
Awesome Site')
   end
end
```

Here is a quick explanation of the items presented in the preceding method. For a full list of all available options, please have a look further down at the Complete List of Action Mailer user-settable attributes section.

default Hash - This is a hash of default values for any email you send from this mailer. In this case we are setting the :from header to a value for all messages in this class. This can be overridden on a per-email basis.

mail - The actual email message, we are passing the :to and :subject headers in.

Just like controllers, any instance variables we define in the method become available for use in the views.

2.1.3 Create a Mailer View

Create a file called welcome_email.html.erb in app/views/user_mailer/. This will be the template used for the email, formatted in HTML:

```
<!DOCTYPE html>
<ht.ml>
 <head>
   <meta content='text/html; charset=UTF-8' http-</pre>
equiv='Content-Type' />
 </head>
 <body>
   <h1>Welcome to example.com, <%= @user.name %></h1>
   >
     You have successfully signed up to example.com,
     your username is: <%= @user.login %>.<br>
   To login to the site, just follow this link: <%=
@url %>.
   Thanks for joining and have a great day!
  </body>
```

</ht.ml>

Let's also make a text part for this email. Not all clients prefer HTML emails, and so sending both is best practice. To do this, create a file called

```
welcome email.text.erb in app/views/user mailer/:
```

When you call the mail method now, Action Mailer will detect the two templates (text and HTML) and automatically generate a multipart/alternative email.

2.1.4 Calling the Mailer

Mailers are really just another way to render a view. Instead of rendering a view and sending it over the HTTP protocol, they are just sending it out through the email protocols instead. Due to this, it makes sense to just have your controller tell the Mailer to send an email when a user is successfully created.

Setting this up is painfully simple.

First, let's create a simple User scaffold:

```
$ bin/rails generate scaffold user name email login
$ bin/rails db:migrate
```

Now that we have a user model to play with, we will just edit the app/controllers/users_controller.rb make it instruct the UserMailer to deliver an email to the newly created user by editing the create action and inserting a call to UserMailer.with(user: @user).welcome_email right after the user is successfully saved.

Action Mailer is nicely integrated with Active Job so you can send emails outside of the request-response cycle, so the user doesn't have to wait on it:

```
class UsersController < ApplicationController
  # POST /users
  # POST /users.json
  def create
    @user = User.new(params[:user])
    respond to do |format|
      if @user.save
        # Tell the UserMailer to send a welcome email
after save
        UserMailer.with(user:
@user) .welcome email.deliver later
        format.html { redirect to (@user, notice: 'User
was successfully created.') }
        format.json { render json: @user, status:
:created, location: @user }
      else
        format.html { render action: 'new' }
        format.json { render json: @user.errors,
status: :unprocessable entity }
      end
    end
 end
end
```

Active Job's default behavior is to execute jobs via the <code>:async</code> adapter. So, you can use <code>deliver_later</code> now to send emails asynchronously. Active Job's default adapter runs jobs with an in-process thread pool. It's well-suited for the development/test environments, since it doesn't require any external infrastructure, but it's a poor fit for production since it drops pending jobs on restart. If you need a persistent backend, you will need to use an Active Job adapter that has a persistent backend (Sidekiq, Resque, etc).

If you want to send emails right away (from a cronjob for example) just call deliver now:

```
class SendWeeklySummary
  def run
    User.find each do |user|
```

```
UserMailer.with(user:
user).weekly_summary.deliver_now
end
end
end
```

Any key value pair passed to with just becomes the params for the mailer action. So with (user: @user, account: @user.account) makes params[:user] and params[:account] available in the mailer action. Just like controllers have params.

The method welcome_email returns an ActionMailer::MessageDelivery object which can then just be told deliver_now or deliver_later to send itself out. The ActionMailer::MessageDelivery object is just a wrapper around a Mail::Message. If you want to inspect, alter or do anything else with the Mail::Message object you can access it with the message method on the ActionMailer::MessageDelivery object.

2.2 Auto encoding header values

Action Mailer handles the auto encoding of multibyte characters inside of headers and bodies.

For more complex examples such as defining alternate character sets or self-encoding text first, please refer to the <u>Mail</u> library.

2.3 Complete List of Action Mailer Methods

There are just three methods that you need to send pretty much any email message:

headers - Specifies any header on the email you want. You can pass a hash of header field names and value pairs, or you can call

```
headers[:field_name] =
'value'.
attachments - Allows you to add attachments to your email. For example,
attachments['file-name.jpg'] = File.read('file-name.jpg').
mail - Sends the actual email itself. You can pass in headers as a hash to
the mail method as a parameter, mail will then create an email, either plain
text, or multipart, depending on what email templates you have defined.
```

2.3.1 Adding Attachments

Action Mailer makes it very easy to add attachments.

Pass the file name and content and Action Mailer and the <u>Mail gem</u> will automatically guess the mime_type, set the encoding and create the attachment.

```
attachments['filename.jpg'] =
File.read('/path/to/filename.jpg')
```

When the mail method will be triggered, it will send a multipart email with an attachment, properly nested with the top level being multipart/mixed and the first part being a multipart/alternative containing the plain text and HTML email messages.

Mail will automatically Base64 encode an attachment. If you want something different, encode your content and pass in the encoded content and encoding in a Hash to the attachments method.

Pass the file name and specify headers and content and Action Mailer and Mail will use the settings you pass in.

```
encoded_content =
SpecialEncode(File.read('/path/to/filename.jpg'))
attachments['filename.jpg'] = {
   mime_type: 'application/gzip',
   encoding: 'SpecialEncoding',
   content: encoded_content
}
```

If you specify an encoding, Mail will assume that your content is already encoded and not try to Base64 encode it.

2.3.2 Making Inline Attachments

Action Mailer 3.0 makes inline attachments, which involved a lot of hacking in pre 3.0 versions, much simpler and trivial as they should be.

First, to tell Mail to turn an attachment into an inline attachment, you just call #inline on the attachments method within your Mailer:

```
def welcome
  attachments.inline['image.jpg'] =
File.read('/path/to/image.jpg')
end
```

Then in your view, you can just reference attachments as a hash and specify which attachment you want to show, calling url on it and then passing the result into the image tag method:

```
Hello there, this is our image
<%= image tag attachments['image.jpg'].url %>
```

As this is a standard call to <code>image_tag</code> you can pass in an options hash after the attachment URL as you could for any other image:

```
Hello there, this is our image
<%= image_tag attachments['image.jpg'].url,
alt: 'My Photo', class: 'photos' %>
```

2.3.3 Sending Email To Multiple Recipients

It is possible to send email to one or more recipients in one email (e.g., informing all admins of a new signup) by setting the list of emails to the :to key. The list of emails can be an array of email addresses or a single string with the addresses separated by commas.

The same format can be used to set carbon copy (Cc:) and blind carbon copy (Bcc:) recipients, by using the :cc and :bcc keys respectively.

2.3.4 Sending Email With Name

Sometimes you wish to show the name of the person instead of just their email address when they receive the email. The trick to doing that is to format the email address in the format "Full Name" <email>.

```
def welcome_email
  @user = params[:user]
  email_with_name = %("#{@user.name}" <#
{@user.email}>)
  mail(to: email_with_name, subject: 'Welcome to My
Awesome Site')
end
```

2.4 Mailer Views

Mailer views are located in the <code>app/views/name_of_mailer_class</code> directory. The specific mailer view is known to the class because its name is the same as the mailer method. In our example from above, our mailer view for the <code>welcome_email</code> method will be in <code>app/views/user_mailer/welcome_email.html.erb</code> for the HTML version and <code>welcome_email.text.erb</code> for the plain text version.

To change the default mailer view for your action you do something like:

In this case it will look for templates at app/views/notifications with name another. You can also specify an array of paths for template_path, and they will be searched in order

If you want more flexibility you can also pass a block and render specific templates or even render inline or text without using a template file:

This will render the template 'another_template.html.erb' for the HTML part and use the rendered text for the text part. The render command is the same one used inside of Action Controller, so you can use all the same options, such as <code>:text</code>, <code>:inline</code> etc.

2.4.1 Caching mailer view

You can perform fragment caching in mailer views like in application views using the cache method.

```
<% cache do %>
    <%= @company.name %>
<% end %>
```

And in order to use this feature, you need to configure your application with this:

```
config.action_mailer.perform_caching = true
```

Fragment caching is also supported in multipart emails. Read more about caching in the **Rails caching guide**.

2.5 Action Mailer Layouts

Just like controller views, you can also have mailer layouts. The layout name needs to be the same as your mailer, such as user_mailer.html.erb and user mailer.text.erb to be automatically recognized by your mailer as a layout.

In order to use a different file, call layout in your mailer:

```
class UserMailer < ApplicationMailer
  layout 'awesome' # use awesome.(html|text).erb as
the layout
end</pre>
```

Just like with controller views, use yield to render the view inside the layout.

You can also pass in a layout: 'layout_name' option to the render call inside the format block to specify different layouts for different formats:

```
class UserMailer < ApplicationMailer
  def welcome_email
    mail(to: params[:user].email) do |format|
       format.html { render layout: 'my_layout' }
       format.text
    end
  end
end</pre>
```

Will render the HTML part using the my_layout.html.erb file and the text part with the usual user mailer.text.erb file if it exists.

2.6 Previewing Emails

Action Mailer previews provide a way to see how emails look by visiting a special URL that renders them. In the above example, the preview class for UserMailer should be named UserMailerPreview and located in

test/mailers/previews/user mailer preview.rb. To see the preview of

welcome_email, implement a method that has the same name and call
UserMailer.welcome email:

```
class UserMailerPreview < ActionMailer::Preview
  def welcome_email
     UserMailer.with(user: User.first).welcome_email
  end
end</pre>
```

Then the preview will be available in http://localhost:3000/rails/mailers/user-mailer/welcome-email.

If you change something in app/views/user_mailer/welcome_email.html.erb or the mailer itself, it'll automatically reload and render it so you can visually see the new style instantly. A list of previews are also available in http://localhost:3000/rails/mailers.

By default, these preview classes live in test/mailers/previews. This can be configured using the preview_path option. For example, if you want to change it to lib/mailer previews, you can configure it in config/application.rb:

```
config.action_mailer.preview_path = "#
{Rails.root}/lib/mailer previews"
```

2.7 Generating URLs in Action Mailer Views

Unlike controllers, the mailer instance doesn't have any context about the incoming request so you'll need to provide the :host parameter yourself.

As the :host usually is consistent across the application you can configure it globally in config/application.rb:

```
config.action_mailer.default_url_options = { host:
'example.com' }
```

Because of this behavior you cannot use any of the *_path helpers inside of an email. Instead you will need to use the associated * url helper. For example instead

of using

```
<%= link_to 'welcome', welcome_path %>
```

You will need to use:

```
<%= link_to 'welcome', welcome_url %>
```

By using the full URL, your links will now work in your emails.

2.7.1 Generating URLs with url for

url for generates a full URL by default in templates.

If you did not configure the :host option globally make sure to pass it to url for.

2.7.2 Generating URLs with Named Routes

Email clients have no web context and so paths have no base URL to form complete web addresses. Thus, you should always use the "_url" variant of named route helpers.

If you did not configure the :host option globally make sure to pass it to the url helper.

```
<%= user_url(@user, host: 'example.com') %>
```

non-GET links require <u>rails-ujs</u> or <u>jQuery UJS</u>, and won't work in mailer templates. They will result in normal GET requests.

2.8 Adding images in Action Mailer Views

Unlike controllers, the mailer instance doesn't have any context about the incoming request so you'll need to provide the :asset host parameter yourself.

As the :asset_host usually is consistent across the application you can configure it globally in config/application.rb:

```
config.action_mailer.asset_host = 'http://example.com'
```

Now you can display an image inside your email.

```
<%= image tag 'image.jpg' %>
```

2.9 Sending Multipart Emails

Action Mailer will automatically send multipart emails if you have different templates for the same action. So, for our UserMailer example, if you have

```
welcome_email.text.erb and welcome_email.html.erb in app/views/user_mailer, Action Mailer will automatically send a multipart email with the HTML and text versions setup as different parts.
```

The order of the parts getting inserted is determined by the :parts_order inside of the ActionMailer::Base.default method.

2.10 Sending Emails with Dynamic Delivery Options

If you wish to override the default delivery options (e.g. SMTP credentials) while delivering emails, you can do this using delivery_method_options in the mailer action.

2.11 Sending Emails without Template Rendering

There may be cases in which you want to skip the template rendering step and supply the email body as a string. You can achieve this using the :body option. In such cases don't forget to add the :content_type option. Rails will default to text/plain otherwise.

```
class UserMailer < ApplicationMailer
  def welcome_email
    mail(to: params[:user].email,
        body: params[:email_body],
        content_type: "text/html",
        subject: "Already rendered!")
  end
end</pre>
```

3 Receiving Emails

Receiving and parsing emails with Action Mailer can be a rather complex endeavor. Before your email reaches your Rails app, you would have had to configure your system to somehow forward emails to your app, which needs to be listening for that. So, to receive emails in your Rails app you'll need to:

Implement a receive method in your mailer.

Configure your email server to forward emails from the address(es) you would like your app to receive to /path/to/app/bin/rails runner 'UserMailer.receive(STDIN.read)'.

Once a method called receive is defined in any mailer, Action Mailer will parse the raw incoming email into an email object, decode it, instantiate a new mailer, and pass the email object to the mailer receive instance method. Here's an example:

```
class UserMailer < ApplicationMailer
  def receive(email)
    page = Page.find by(address: email.to.first)
    page.emails.create(
      subject: email.subject,
     body: email.body
    )
    if email.has attachments?
      email.attachments.each do |attachment|
        page.attachments.create({
          file: attachment,
          description: email.subject
        })
      end
    end
  end
end
```

4 Action Mailer Callbacks

Action Mailer allows for you to specify a before_action, after_action and around action.

Filters can be specified with a block or a symbol to a method in the mailer class similar to controllers.

You could use a before_action to populate the mail object with defaults, delivery_method_options or insert default headers and attachments.

```
end

def project_invitation
   @project = params[:project]
   @summarizer =
ProjectInvitationSummarizer.new(@project.bucket)

   mail subject: "#{@inviter.name.familiar} added you
to a project in Basecamp (#{@account.name})"
   end
end
```

You could use an after_action to do similar setup as a before_action but using instance variables set in your mailer action.

```
class UserMailer < ApplicationMailer
  before action { @business, @user =
params[:business], params[:user] }
  after action :set delivery options,
               :prevent delivery to guests,
               :set business headers
  def feedback message
  end
  def campaign message
  end
  private
    def set delivery options
      # You have access to the mail instance,
      # @business and @user instance variables here
      if @business && @business.has smtp settings?
        mail.delivery method.settings.merge!
(@business.smtp settings)
      end
    end
    def prevent delivery to guests
      if @user && @user.guest?
        mail.perform deliveries = false
      end
    end
```

```
def set_business_headers
   if @business
    headers["X-SMTPAPI-CATEGORY"] = @business.code
   end
   end
end
```

Mailer Filters abort further processing if body is set to a non-nil value.

5 Using Action Mailer Helpers

Action Mailer now just inherits from AbstractController, so you have access to the same generic helpers as you do in Action Controller.

6 Action Mailer Configuration

The following configuration options are best made in one of the environment files (environment.rb, production.rb, etc...)

Configuration	Description
logger	Generates information on the mailing run if available. Can be set to nil for no logging. Compatible with both Ruby's own Logger and Log4r loggers.
smtp_settings	Allows detailed configuration for :smtp delivery method: :address - Allows you to use a remote mail server. Just change it from its default "localhost" setting. :port - On the off chance that your mail server doesn't run on port 25, you can change it. :domain - If you need to specify a HELO domain, you can do it here. :user_name - If your mail server requires authentication, set the username in this setting. :password - If your mail server requires authentication, set the password in this

Configuration	Description
	setting. :authentication - If your mail server requires authentication, you need to specify the authentication type here. This is a symbol and one of :plain (will send the password in the clear), :login (will send password Base64 encoded) or :cram_md5 (combines a Challenge/Response mechanism to exchange information and a cryptographic Message Digest 5 algorithm to hash important information) :enable_starttls_auto - Detects if STARTTLS is enabled in your SMTP server and starts to use it. Defaults to true. :openssl_verify_mode - When using TLS, you can set how OpenSSL checks the certificate. This is really useful if you need to validate a self-signed and/or a wildcard certificate. You can use the name of an OpenSSL verify constant ('none' or 'peer') or directly the constant (OpenSSL::SSL::VERIFY_NONE Or OpenSSL::SSL::VERIFY_PEER).
sendmail_settings	Allows you to override options for the :sendmail delivery method. :location - The location of the sendmail executable. Defaults to /usr/sbin/sendmail. :arguments - The command line arguments to be passed to sendmail. Defaults to -i.
raise_delivery_erro	Whether or not errors should be raised if the email fails to be delivered. This only works if the external email server is configured for immediate delivery.

Configuration	Description
delivery_method	Defines a delivery method. Possible values are: :smtp (default), can be configured by using config.action_mailer.smtp_settings. :sendmail, can be configured by using config.action_mailer.sendmail_settings. :file: save emails to files; can be configured by using config.action_mailer.file_settings. :test: save emails to ActionMailer::Base.deliveries array. See API docs for more info.
perform_deliveries	Determines whether deliveries are actually carried out when the deliver method is invoked on the Mail message. By default they are, but this can be turned off to help functional testing.
deliveries	Keeps an array of all the emails sent out through the Action Mailer with delivery_method :test. Most useful for unit and functional testing.
default_options	Allows you to set default values for the mail method options (:from, :reply_to, etc.).

For a complete writeup of possible configurations see the <u>Configuring Action Mailer</u> in our Configuring Rails Applications guide.

6.1 Example Action Mailer Configuration

An example would be adding the following to your appropriate config/environments/\$RAILS ENV.rb file:

```
config.action_mailer.delivery_method = :sendmail
# Defaults to:
# config.action_mailer.sendmail_settings = {
# location: '/usr/sbin/sendmail',
# arguments: '-i'
```

```
# }
config.action_mailer.perform_deliveries = true
config.action_mailer.raise_delivery_errors = true
config.action_mailer.default_options = {from: 'no-
reply@example.com'}
```

6.2 Action Mailer Configuration for Gmail

As Action Mailer now uses the <u>Mail gem</u>, this becomes as simple as adding to your config/environments/\$RAILS ENV.rb file:

Note: As of July 15, 2014, Google increased <u>its security measures</u> and now blocks attempts from apps it deems less secure. You can change your Gmail settings <u>here</u> to allow the attempts. If your Gmail account has 2-factor authentication enabled, then you will need to set an <u>app password</u> and use that instead of your regular password. Alternatively, you can use another ESP to send email by replacing 'smtp.gmail.com' above with the address of your provider.

7 Mailer Testing

You can find detailed instructions on how to test your mailers in the **testing guide**.

8 Intercepting Emails

There are situations where you need to edit an email before it's delivered. Fortunately Action Mailer provides hooks to intercept every email. You can register an interceptor to make modifications to mail messages right before they are handed to the delivery agents.

```
class SandboxEmailInterceptor
```

```
def self.delivering_email(message)
   message.to = ['sandbox@example.com']
  end
end
```

Before the interceptor can do its job you need to register it with the Action Mailer framework. You can do this in an initializer file

```
config/initializers/sandbox_email_interceptor.rb

if Rails.env.staging?
    ActionMailer::Base.register_interceptor(SandboxEmailIn end
```

The example above uses a custom environment called "staging" for a production like server but for testing purposes. You can read <u>Creating Rails environments</u> for more information about custom Rails environments

Feedback

You're encouraged to help improve the quality of this guide.

Please contribute if you see any typos or factual errors. To get started, you can read our **documentation contributions** section.

You may also find incomplete content or stuff that is not up to date. Please do add any missing documentation for master. Make sure to check <u>Edge Guides</u> first to verify if the issues are already fixed or not on the master branch. Check the <u>Ruby on Rails Guides Guidelines</u> for style and conventions.

If for whatever reason you spot something to fix but cannot patch it yourself, please **open an issue**.

And last but not least, any kind of discussion regarding Ruby on Rails documentation is very welcome on the <u>rubyonrails-docs mailing list</u>.

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