# Refining the API

# In this Video, we are going to take a look at...

- How to test JWT-based APIs

- How to implement a query (Search) endpoint

- How to test a query endpoint

```
fred at fred-HP-Desktop in ~/Work/packt-pub/expert_rails_5/starmail on master! using ruby-2.3.3@starmail
± rails s
=> Booting Puma
=> Rails 5.0.1 application starting in development on http://localhost:3000
=> Run `rails server -h` for more startup options
Puma starting in single mode...
* Version 3.7.0 (ruby 2.3.3-p222), codename: Snowy Sagebrush
* Min threads: 5, max threads: 5
* Environment: development
* Listening on tcp://0.0.0.0:3000
Use Ctrl-C to stop
Started POST "/authenticate" for 127.0.0.1 at 2017-03-05 12:31:15 +0000
   ActiveRecord::SchemaMigration Load (0.2ms)  SELECT "schema_migrations".* FROM "schema_migrations"
Processing by AuthenticationController#authenticate as */*
   Parameters: {"name"=>"starhub", "password"=>"[FILTERED]", "authentication"=>{"name"=>"starhub", "password"=>"[FILTERED]"}}
   Client Load (39.2ms)  SELECT "clients".* FROM "clients" WHERE "clients"."name" = $1 LIMIT $2  [["name", "starhub"], ["LIMIT
   Client Load (0.2ms)  SELECT "clients".* FROM "cli
[active_model_serializers] Rendered ActiveModel::Ser
Completed 200 OK in 261ms (Views: 2.4ms | ActiveReco

Started GET "/messages" for 127.0.0.1 at 2017-03-05
Processing by MessagesController#index as */*
   Client Load (0.5ms)  SELECT "clients".* FROM "cli
   Message Load (19.8ms)  SELECT "messages".* FROM "m
[active_model_serializers] Rendered ActiveModel::Ser
Completed 200 OK in 80ms (Views: 50.7ms | ActiveReco
```

```
fred@fred-HP-Desktop: ~/Work/packt-pub/expert_rails_5/starm
sing ruby-2.3.3@starmail
 ±      curl -H "Content-Type: application/json" -X POST -d '{"name":"starh
password":"123secret"}' http://localhost:3000/authenticate
{"auth_token":"eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJjbGllbnRfaWQiOjEsImV4
MTQ4ODgwMzQ3NX0.6feHhq9Yk4A-Cv7LhFIxpy0JrUUn73kC-HYqwyTIEuc"}
fred at fred-HP-Desktop in ~/Work/packt-pub/expert_rails_5/starmail on mast
sing ruby-2.3.3@starmail
 ± curl -H "Authorization: eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJjbGllbnRf
OjEsImV4cCI6MTQ4ODgwMzQ3NX0.6feHhq9Yk4A-Cv7LhFIxpy0JrUUn73kC-HYqwyTIEuc" htt
localhost:3000/messages
[{"id":5,"originator":"thomas","content":"this is my message","recipient":"f
,"status":1},{"id":6,"originator":"sarah","content":"hello, how are you?","
fred at fred-HP-Desktop in ~/Work/packt-pub/expert_rails_5/starmail on mast
 ±
```

```
  Client Load (0.3ms)  SELECT  "clients".* FROM "clients" WHERE "clients"."name" = $1 LIMIT $2  [["name", "starhub"], ["LIMIT"
, 1]]
  Client Load (0.3ms)  SELECT  "clients".* FROM "clients" WHERE "clients"."name" = $1 LIMIT $2  [["name", "starhub"], ["LIMIT"
, 1]]
[active_model_serializers] Rendered ActiveModel::Serializer::Null with Hash (0.08ms)
Completed 200 OK in 140ms (Views: 2.6ms | ActiveRecord: 3.4ms)


Started GET "/messages" for 127.0.0.1 at 2017-03-02 14:39:23 +0000
Processing by MessagesController#index as */*
  Client Load (0.3ms)  SELECT  "clients".* FROM "clients" WHERE "clients"."id" = $1 LIMIT $2  [["id", 1], ["LIMIT", 1]]
  Message Load (0.4ms)  SELECT "messages".* FROM "messages"
[active_model_serializers] Rendered ActiveModel::Serializer::CollectionSerializer with ActiveModelSerializers::Adapter::Attrib
utes (0.46ms)
Completed 200 OK in 19ms (Views: 11.6ms | ActiveRecord: 3.8ms)


Started POST "/authenticate" for 127.0.0.1 at 2017-03-02 14:41:33 +0000
Processing by AuthenticationController#authenticate as */*
  Parameters: {"name"=>"starhub", "password"=>"[FILTERED]", "authentication"=>{"name"=>"starhub", "password"=>"[FILTERED]"}}
  Client Load (0.2ms)  SELECT  "clients".* FROM "clients" WHERE "clients"."name" = $1 LIMIT $2  [["name", "starhub"], ["LIMIT"
, 1]]
  CACHE (0.0ms)  SELECT  "clients".* FROM "clients" WHERE "clients"."name" = $1 LIMIT $2  [["name", "starhub"], ["LIMIT", 1]]
[active_model_serializers] Rendered ActiveModel::Serializer::Null with Hash (0.06ms)
Completed 200 OK in 128ms (Views: 0.6ms | ActiveRecord: 0.2ms)


Started GET "/messages" for 127.0.0.1 at 2017-03-02 14:41:35 +0000
Processing by MessagesController#index as */*
  Client Load (0.2ms)  SELECT  "clients".* FROM "clients" WHERE "clients"."id" = $1 LIMIT $2  [["id", 1], ["LIMIT", 1]]
  Message Load (0.2ms)  SELECT "messages".* FROM "messages"
[active_model_serializers] Rendered ActiveModel::Serializer::CollectionSerializer with ActiveModelSerializers::Adapter::Attrib
utes (0.33ms)
Completed 200 OK in 3ms (Views: 1.3ms | ActiveRecord: 0.4ms)
```

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  Client Load (0.3ms)  SELECT  "clients".* FROM "clients" WHERE "clients"."name" = $1 LIMIT $2  [["name", "starhub"], ["LIMIT"
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[active_model_serializers] Rendered ActiveModel::Serializer::CollectionSerializer with ActiveModelSerializers::Adapter::Attrib
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Completed 200 OK in 19ms (Views: 11.6ms | ActiveRecord: 3.8ms)


Started POST "/authenticate" for 127.0.0.1 at 2017-03-02 14:41:33 +0000
Processing by AuthenticationController#authenticate as */*
  Parameters: {"name"=>"starhub", "password"=>"[FILTERED]", "authentication"=>{"name"=>"starhub", "password"=>"[FILTERED]"}}
  Client Load (0.2ms)  SELECT  "clients".* FROM "clients" WHERE "clients"."name" = $1 LIMIT $2  [["name", "starhub"], ["LIMIT"
, 1]]
  CACHE (0.0ms)  SELECT  "clients".* FROM "clients" WHERE "clients"."name" = $1 LIMIT $2  [["name", "starhub"], ["LIMIT", 1]]
[active_model_serializers] Rendered ActiveModel::Serializer::Null with Hash (0.06ms)
Completed 200 OK in 128ms (Views: 0.6ms | ActiveRecord: 0.2ms)


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Processing by MessagesController#index as */*
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  Message Load (0.2ms)  SELECT "messages".* FROM "messages"
[active_model_serializers] Rendered ActiveModel::Serializer::CollectionSerializer with ActiveModelSerializers::Adapter::Attrib
utes (0.33ms)
Completed 200 OK in 3ms (Views: 1.3ms | ActiveRecord: 0.4ms)


^CExiting
fred  at fred-HP-Desktop in ~/Work/packt-pub/expert_rails_5/starmail on master! using ruby 2.3.00starmail
± rails test
```

```
s controller_test.rb:22]:
"Message.count" didn't change by -1.
Expected: 5
  Actual: 6
```

bin/rails test test/controllers/messages_controller_test.rb:21

```
F

Failure:
MessagesControllerTest#test_should_get_index [/home/fred/Work/packt-pub/expert_rails_5/starmail/test/controllers/messages_cont
roller_test.rb:18]:
Expected response to be a <2XX: success>, but was a <401: Unauthorized>
```

bin/rails test test/controllers/messages_controller_test.rb:8

```
F

Failure:
MessagesControllerTest#test_should_create_message [/home/fred/Work/packt-pub/expert_rails_5/starmail/test/controllers/messages
_controller_test.rb:14]:
"Message.count" didn't change by 1.
Expected: 7
  Actual: 6
```

bin/rails test test/controllers/messages_controller_test.rb:13


Finished in 0.297960s, 10.0685 runs/s, 10.0685 assertions/s.

3 runs, 3 assertions, 3 failures, 0 errors, 0 skips
fred   at fred-HP-Desktop in ~/Work/packt-pub/expert_rails_5/starmail on master! using ruby-2.3.4@starmail
±
```

File  Edit  Selection  Find  View  Goto  Tools  Project  Preferences  Help  NimLime

client_authentication.rb        test_helper.rb

```ruby
1  ENV['RAILS_ENV'] ||= 'test'
2  require File.expand_path('../../config/environment', __FILE__)
3  require 'rails/test_help'
4
5
6- class ActiveSupport::TestCase
7    # Setup all fixtures in test/fixtures/*.yml for all tests in alphabetica
     order.
8    fixtures :all
9
10   # Add more helper methods to be used by all tests here...
11 end
12
```

Line 1, Column 1                                                    Spaces:           Ruby

File   Edit   Selection   Find   View   Goto   Tools   Project   Preferences   Help   NimLime

client_authentication.rb          test_helper.rb

```ruby
1  ENV['RAILS_ENV'] ||= 'test'
2  require File.expand_path('../../config/environment', __FILE__)
3  require 'rails/test_help'
4  require 'jwt'
5  require 'minitest/mock'
6
7
8  class ActiveSupport::TestCase
9    # Setup all fixtures in test/fixtures/*.yml for all tests in alphabetica
       order.
10   fixtures :all
11
12   # Add more helper methods to be used by all tests here...
13 end
14
```

Line 5, Column 24

File   Edit   Selection   Find   View   Goto   Tools   Project   Preferences   Help   NimLime

client_authentication.rb          test_helper.rb          messages_controller_test.rb

client_authentication.rb
request_authorization.rb
controllers
jobs
mailers
models
concerns
application_record.rb
client.rb
message.rb
serializers
views
bin
config
db
lib
log
public
test
controllers
.keep
messages_controller_test.rb
fixtures
integration
mailers
models
test_helper.rb
tmp

```ruby
1   require 'test_helper'
2
3-  class MessagesControllerTest < ActionDispatch::IntegrationTest
4     setup do
5       @message = messages(:one)
6     end
7
8-    test "should get index" do
9       get messages_url, as: :json
10      assert_response :success
11    end
12
13-   test "should create message" do
14      assert_difference('Message.count') do
15        post messages_url, params: { message: { content: @message.content,
                originator: @message.originator, recipient: @message.recipient, s1
                @message.status } }, as: :json
16      end
17
18      assert_response 201
19    end
20
```

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File   Edit   Selection   Find   View   Goto   Tools   Project   Preferences   Help   NimLime

client_authentication.rb          test_helper.rb          messages_controller_test.rb

```ruby
1   require 'test_helper'
2
3-  class MessagesControllerTest < ActionDispatch::IntegrationTest
4-    setup do
5       @message = messages(:one)
6       @client = clients(:starhub)
7       @token = JWT.encode({user: @client.id},
8                            Rails.application.secrets.secret_key_base)
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11-   test "should get index" do
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               originator: @message.originator, recipient: @message.recipient, st
               @message.status } }, as: :json
19      end
```

Files tree (left panel):
- client_authentication.rb
- request_authorization.rb
- controllers
- jobs
- mailers
- models
  - concerns
  - application_record.rb
  - client.rb
  - message.rb
- serializers
- views
- bin
- config
- db
- lib
- log
- public
- test
  - controllers
    - .keep
    - messages_controller_test.rb
  - fixtures
  - integration
  - mailers
  - models
  - test_helper.rb
- tmp

File   Edit   Selection   Find   View   Goto   Tools   Project   Preferences   Help   NimLime

client_authentication.rb | test_helper.rb | messages_controller_test.rb

```ruby
1   require 'test_helper'
2
3-  class MessagesControllerTest < ActionDispatch::IntegrationTest
4-    setup do
5      @message = messages(:one)
6      @client = clients(:starhub)
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13     assert_response :success
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18       post messages_url, params: { message: { content: @message.content,
                originator: @message.originator, recipient: @message.recipient, s1
                @message.status } }, as: :json
19     end
20
```

Sidebar:
- client_authentication.rb
- request_authorization.rb
- controllers
- jobs
- mailers
- models
  - concerns
  - application_record.rb
  - client.rb
  - message.rb
- serializers
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- bin
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- lib
- log
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- test
  - controllers
    - .keep
    - messages_controller_test.rb
  - fixtures
  - integration
  - mailers
  - models
  - test_helper.rb
- tmp

Line 12, Column 32                                    Spaces:            Ruby

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◀ ▶   client_authentication.rb        test_helper.rb           messages_controller_test.rb

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 7        @token = JWT.encode({user: @client.id},
 8                            Rails.application.secrets.secret_key_base)
 9      end
10
11-     test "should get index" do
12        get messages_url, as: :json
13        get messages_url, headers: {HTTP_AUTHORIZATION: @token},
14            as: :query
15        assert_response :success
16      end
17
18-     test "should create message" do
19        assert_difference('Message.count') do
20          post messages_url, params: { message: { content: @message.content,
                 originator: @message.originator, recipient: @message.recipient, s1
                 @message.status } }, as: :json
```

Line 19, Column 36                                                         Spaces:            Ruby

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client_authentication.rb        test_helper.rb          messages_controller_test.rb

```ruby
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3-  class MessagesControllerTest < ActionDispatch::IntegrationTest
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8                            Rails.application.secrets.secret_key_base)
9     end
10
11-    test "should get index" do
12      Client.stub(:find, @client) do
13        get messages_url, headers: {HTTP_AUTHORIZATION: @token},
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                originator: @message.originator, recipient: @message.recipient, st
                @message.status } }, as: :json
```

Menu     5420_05_04...   fred@fred-H...   WPS Present...   ~/Work/pack...

File   Edit   Selection   Find   View   Goto   Tools   Project   Preferences   Help   NimLime

client_authentication.rb        test_helper.rb        messages_controller_test.rb

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1   require 'test_helper'
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13        get messages_url, headers: {HTTP_AUTHORIZATION: @token},
14          as: :query
15      end
16      assert_response :success
17    end
18
19    test "should create message" do
20      assert_difference('Message.count') do
21        post messages_url, params: { message: { content: @message.content,
                originator: @message.originator, recipient: @message.recipient,
```

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client_authentication.rb        test_helper.rb        **messages_controller_test.rb**

```ruby
18
19   test "should create message" do
20     assert_difference('Message.count') do
21       post messages_url, params: { message: { content: @message.content,
               originator: @message.originator, recipient: @message.recipient,
               status: @message.status } }, as: :json
22     end
23
24     assert_response 201
25   end
26
27   test "should destroy message" do
28     assert_difference('Message.count', -1) do
29       delete message_url(@message), as: :json
30     end
31
32     assert_response 204
33   end
34 end
35
```

Line 16, Column 5                                                                    Spaces:

File   Edit   Selection   Find   View   Goto   Tools   Project   Preferences   Help   NimLime

◄ ►   client_authentication.rb     test_helper.rb       messages_controller_test.rb

```ruby
18
19    test "should create message" do
20      assert_difference('Message.count') do
21        post messages_url, params: { message: { content: @message.content,
                  originator: @message.originator, recipient: @message.recipient,
                  status: @message.status } }, as: :json
22      end
23
24      assert_response 201
25    end
26
27    test "should destroy message" do
28      assert_difference('Message.count', -1) do
29        delete message_url(@message), as: :json
30      end
31
32      assert_response 204
33    end
34  end
35
```

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File   Edit   Selection   Find   View   Goto   Tools   Project   Preferences   Help   NimLime

client_authentication.rb      test_helper.rb      messages_controller_test.rb

```ruby
12-        Client.stub(:find, @client) do
13          get messages_url, headers: {HTTP_AUTHORIZATION: @token},
14            as: :query
15        end
16        assert_response :success
17      end
18
19      test "should create message" do
20-        Client.stub(:find, @client) do
21          assert_difference('Message.count') do
22-            post messages_url,
23              params: { message: { content: @message.content, originator: @mes
                         originator, recipient: @message.recipient } },
24              headers: {HTTP_AUTHORIZATION: @token}, as: :json
25          end
26
27          assert_response 201
28        end
29      end
30
31
32      test "should destroy message" do
```

30 characters selected                                                    Spaces:

```
fred at fred-HP-Desktop in ~/Work/packt-pub/expert_rails_5/starmail on master! using ruby-2.3.3@starmail
± rails test
```

```
fred at fred-HP-Desktop in ~/Work/packt-pub/expert_rails_5/starmail on master! using ruby-2.3.3@starmail
± rails test
Running via Spring preloader in process 2748
Run options: --seed 63804

# Running:

...

Finished in 0.316601s, 9.4756 runs/s, 12.6342 assertions/s.

3 runs, 4 assertions, 0 failures, 0 errors, 0 skips
fred at fred-HP-Desktop in ~/Work/packt-pub/expert_rails_5/starmail on master! using ruby-2.3.3@starmail
±
```

File   Edit   Selection   Find   View   Goto   Tools   Project   Preferences   Help   NimLime

client_authentication.rb        test_helper.rb        messages_controller_test.rb

```ruby
18
19    test "should create message" do
20-     Client.stub(:find, @client) do
21       assert_difference('Message.count') do
22-        post messages_url,
23          params: { message: { content: @message.content, originator: @mes
                      originator, recipient: @message.recipient } },
24          headers: {HTTP_AUTHORIZATION: @token}, as: :json
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27       assert_response 201
28     end
29    end
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31
32    test "should destroy message" do
33-     Client.stub(:find, @client) do
34       assert_difference('Message.count', -1) do
35-        delete message_url(@message),
36          headers: {HTTP_AUTHORIZATION: @token},
37          as: :json
38     end
```

Menu          5420_05_04 ...   fred@fred-H...   WPS Present...   ~/Work/pack...   Q ★ ⊙ ❶ 1 ○

File  Edit  Selection  Find  View  Goto  Tools  Project  Preferences  Help  NimLime

client_authentication.rb     test_helper.rb     messages_controller_test.rb

```ruby
1   require 'test_helper'
2
3-  class MessagesControllerTest < ActionDispatch::IntegrationTest
4     setup do
5       @message = messages(:one)
6       @client = clients(:starhub)
7       @token = JWT.encode({user: @client.id},
8                           Rails.application.secrets.secret_key_base)
9     end
10
11    test "should get index" do
12-     Client.stub(:find, @client) do
13        get messages_url, headers: {HTTP_AUTHORIZATION: @token},
14          as: :query
15      end
16      assert_response :success
17    end
18
19    test "should create message" do
20-     Client.stub(:find, @client) do
21        assert_difference('Message.count') do
22-         post messages_url,
```

Project tree (left panel):
- client_authentication.rb
- request_authorization.rb
- controllers
- jobs
- mailers
- models
  - concerns
  - application_record.rb
  - client.rb
  - message.rb
- serializers
- views
- bin
- config
- db
- lib
- log
- public
- test
  - controllers
    - .keep
    - messages_controller_test.rb
  - fixtures
  - integration
  - mailers
  - models
  - test_helper.rb
- tmp

7 lines, 188 characters selected                                    Spaces:      Ruby

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# Consuming the API

Next Video