

Redmine - Defect #42200

InlineAutocompleteSystemTest login test fails randomly

2025-02-01 10:06 - Katsuya HIDAKA

Status:	Closed	Start date:	
Priority:	Normal	Due date:	
Assignee:	Go MAEDA	% Done:	0%
Category:	Code cleanup/refactoring	Estimated time:	0.00 hour
Target version:	5.1.7	Affected version:	
Resolution:	Fixed		
<div>Description</div> <p>Currently, the following test in the log_user method within InlineAutocompleteSystemTest fails randomly.</p> <pre>def log_user(login, password) visit '/my/page' assert_equal '/login', current_path # <== Here within('#login-form form') do fill_in 'username', :with => login ... end end</pre> <p>Failure:</p> <pre>InlineAutocompleteSystemTest#test_inline_autocompletion_of_wiki_page_links [test/application_system_test_case.rb:71]:</pre> <p>Expected: "/login"</p> <p>Actual: "/my/page"</p> <p>bin/rails test test/system/inline_autocomplete_test.rb:144</p> <p>https://github.com/hidakatsuya/redmine/actions/runs/13014082081/job/36298727579</p> <p>This test failure mainly occurs in the InlineAutocompleteSystemTest test, but it can also occur in other tests.</p>			

Associated revisions

Revision 23505 - 2025-02-11 04:22 - Go MAEDA

Fix random failures in InlineAutocompleteTest due to interference from requests in the previous test (#42200).

Patch by Katsuya HIDAKA (user:hidakatsuya).

Revision 23506 - 2025-02-11 04:24 - Go MAEDA

Add missing assertions to InlineAutocompleteTest (#42200).

Patch by Katsuya HIDAKA (user:hidakatsuya).

Revision 23509 - 2025-02-13 08:51 - Go MAEDA

Merged r23505 from trunk to 6.0-stable (#42200).

Revision 23510 - 2025-02-13 08:52 - Go MAEDA

Merged r23506 from trunk to 6.0-stable (#42200).

Revision 23511 - 2025-02-13 08:53 - Go MAEDA

Merged r23505 from trunk to 5.1-stable (#42200).

Revision 23512 - 2025-02-13 08:54 - Go MAEDA

Merged r23506 from trunk to 5.1-stable (#42200).

History

#1 - 2025-02-03 05:22 - Katsuya HIDAHA

- File 0001-Fix-random-failures-in-InlineAutocompleteTest-due-to-interference-from-requests-in-the-previous-test.patch added

- File 0002-Add-missing-assertions-to-InlineAutocompleteTest.patch added

I have identified the cause of the random failures in InlineAutocompleteSystemTest and will explain the details, the root cause, and the solution.

Currently, there are two distinct failure patterns in InlineAutocompleteSystemTest:

1. Login test failure

```
Failure:
  InlineAutocompleteSystemTest#test_inline_autocompletion_of_wiki_page_links [test/application_system_test_case.rb:71]:
  Expected: "/login"
  Actual:  "/my/page"

bin/rails test test/system/inline_autocomplete_test.rb:138
```

2. StaleElementReferenceError during autocomplete assertion

```
Error:
  InlineAutocompleteSystemTest#test_inline_autocomplete_for_users_on_issues_bulk_edit_show_autocomplete:
  Selenium::WebDriver::Error::StaleElementReferenceError: stale element reference: stale element not found
  in the current frame
    (Session info: chrome=131.0.6778.204); For documentation on this error, please visit: https://www.selenium.dev/documentation/webdriver/troubleshooting/errors#stale-element-reference-exception
    test/system/inline_autocomplete_test.rb:207:in `block in test_inline_autocomplete_for_users_on_issue_s_bulk_edit_show_autocomplete'
    test/system/inline_autocomplete_test.rb:205:in `test_inline_autocomplete_for_users_on_issues_bulk_edit_show_autocomplete'

bin/rails test test/system/inline_autocomplete_test.rb:198
```

Both failures occur because asynchronous requests to AutoCompleteController from a preceding test case interfere with the subsequent test.

For example, if test_inline_autocomplete_for_issues_should_escape_html_elements is followed by another test, that test may fail:

```
def test_inline_autocomplete_for_issues_should_escape_html_elements
  issue = Issue.generate!(subject: 'This issue has a <select> element', project_id: 1, tracker_id: 1)

  log_user('jsmith', 'jsmith')
  visit 'projects/1/issues/new'

  fill_in 'Description', :with => '#This'

  within('.tribute-container') do
    assert page.has_text? "Bug ##{issue.id}: This issue has a <select> element"
  end
end
```

In fill_in 'Description', :with => '#This', each character is entered one by one, triggering an asynchronous request to AutoCompleteController at each step. The assertion assert page.has_text? "Bug ##{issue.id}: This issue has a <select> element" passes as soon as the "#" character is entered, completing the test. However, the remaining characters ("This") are still input, sending four more asynchronous requests to AutoCompleteController, which may interfere with the next test.

1. Login test failure

While I haven't conducted a detailed analysis, this likely occurs because the login session from the previous test is being restored.

2. StaleElementReferenceError

This happens because the asynchronous responses from the previous test's AutoCompleteController requests modify the current test's DOM.

To address this, I have attached a patch that resets the session for each test case in InlineAutocompleteTest. This ensures that asynchronous requests from the previous test are discarded, keeping the test environment clean.

Additionally, although not directly related to this issue, I have included a second patch to add missing assertions.

#2 - 2025-02-03 05:26 - Katsuya HIDAHA

After applying these patches, I confirmed that all tests, including system tests, pass.

#3 - 2025-02-03 09:12 - Go MAEDA

- Category set to Code cleanup/refactoring
- Target version set to 5.1.7

Setting the target version to 5.1.7.

#4 - 2025-02-03 10:03 - Massimo Rossello

Since the problem may happen in multiple other tests, wouldn't it be a more generic solution to put a `reset_session!` directly into `log_user` ?

#5 - 2025-02-08 18:45 - Katsuya HIDAKA

Thank you for your comment.

Unfortunately, this problem cannot be solved by `reset_session!`. I will explain the reason in the following comment.

#6 - 2025-02-08 18:49 - Katsuya HIDAKA

- File `0001-v2-Fix-random-failures-in-InlineAutocompleteTest-due-to-interference-from-requests-in-the-previous-test.patch` added

I realized that the patch 0001 attached in [#note-1](#) is not the best solution to this problem. I am attaching another patch (V2) with a different solution for 0001.

The original patch 0001 (referred to as V1) has two problems:

- It does not solve the `StaleElementReferenceError`.
Even if the 0001 (V1) patch is applied, a `StaleElementReferenceError` may still occur in `InlineAutocompleteTest`.
- The test is incomplete.
As explained in [#note-1](#), although `"#This"` is being entered, the test passes when the first `"#"` is entered. In other words, in the current test, the result is evaluated without waiting for the completion of all autocomplete request processing that occurs when `"#This"` is entered. I don't think this is an appropriate test.

In patch V2, I will modify the test code so that the assertion is performed after the completion of all autocomplete processing for the entered value. As a result, this problem can be solved by avoiding the execution of the next test while leaving requests in progress.

As will be clear in the next comment, Capybara should wait for the requests to complete, but it seems that it is not able to capture the completion of some requests, at least in the `InlineAutocompleteTest`. This is the same even when the `reset_sessions!` method is explicitly used.

#7 - 2025-02-08 18:50 - Katsuya HIDAKA

To provide supporting evidence for the suspected cause described in [#note-1](#), I created a reproduction code (not 100%) for this problem and actually observed the previous test requests interfering with subsequent tests.

- Reproduction code
<https://github.com/hidakatsuya/redmine/compare/master...hidakatsuya:redmine:login-test-failure#diff-072e3b90cde849d28013a0e307e27782804923873ef5658e6d7c05ae3c686d8b>
- Test results
<https://github.com/hidakatsuya/redmine/actions/runs/13214702048/job/36898361906>

The following is an excerpt and formatted version of the test result log.

test_1 result (enter `"#abcdefghijkl"`):

```
InlineAutocompleteSystemTest#test_1 =
request: GET /my/page (HTTP_COOKIE=...)
request: GET /login?back_url=http%3A%2F%2F127.0.0.1%3A44235%2Fmy%2Fpage (HTTP_COOKIE=...)
request: POST /login (HTTP_COOKIE=...)
(snip)
request: GET /issues/auto_complete?project_id=ecookbook&q= (HTTP_COOKIE=_redmine_session=WU42TUpI...)
request: GET /issues/auto_complete?project_id=ecookbook&q=a (HTTP_COOKIE=_redmine_session=WU42TUpI...)
  pending_requests = (1) ["/issues/auto_complete?project_id=ecookbook&q="]
request: GET /issues/auto_complete?project_id=ecookbook&q=ab (HTTP_COOKIE=_redmine_session=WU42TUpI...)
  pending_requests = (2) ["/issues/auto_complete?project_id=ecookbook&q=", "/issues/auto_complete?project_id=ecookbook&q=a"]
request: GET /issues/auto_complete?project_id=ecookbook&q=abc (HTTP_COOKIE=_redmine_session=WU42TUpI...)
  pending_requests = (3) ["/issues/auto_complete?project_id=ecookbook&q=", "/issues/auto_complete?project_id=ecookbook&q=a", "/issues/auto_complete?project_id=ecookbook&q=ab"]
request: GET /issues/auto_complete?project_id=ecookbook&q=abcdef (HTTP_COOKIE=_redmine_session=WU42TUpI...)
  pending_requests = (3) ["/issues/auto_complete?project_id=ecookbook&q=a", "/issues/auto_complete?project_id=ecookbook&q=ab", "/issues/auto_complete?project_id=ecookbook&q=abc"]
request: GET /issues/auto_complete?project_id=ecookbook&q=abcdefg (HTTP_COOKIE=_redmine_session=WU42TUpI...)
  pending_requests = (3) ["/issues/auto_complete?project_id=ecookbook&q=ab", "/issues/auto_complete?project_id=ecookbook&q=abc", "/issues/auto_complete?project_id=ecookbook&q=abcdef"]
```

```
ecookbook&q=abc", "/issues/auto_complete?project_id=ecookbook&q=abcdef"]
Capybara::Session#reset! called
request: GET /issues/auto_complete?project_id=ecookbook&q=abcdefgh (HTTP_COOKIE=_redmine_session=WU42TUpI...)
pending_requests = (3) ["/issues/auto_complete?project_id=ecookbook&q=ab", "/issues/auto_complete?project_id=ecookbook&q=abcdef", "/issues/auto_complete?project_id=ecookbook&q=abcdefg"]
request: GET /issues/auto_complete?project_id=ecookbook&q=abcdefghi (HTTP_COOKIE=_redmine_session=WU42TUpI...)
pending_requests = (3) ["/issues/auto_complete?project_id=ecookbook&q=abcdef", "/issues/auto_complete?project_id=ecookbook&q=abcdefg", "/issues/auto_complete?project_id=ecookbook&q=abcdefgh"]
Capybara::Server#wait_for_pending_requests called
request: GET /issues/auto_complete?project_id=ecookbook&q=abcdefghij (HTTP_COOKIE=_redmine_session=WU42TUpI...)
)
pending_requests = (3) ["/issues/auto_complete?project_id=ecookbook&q=abcdefg", "/issues/auto_complete?project_id=ecookbook&q=abcdefgh", "/issues/auto_complete?project_id=ecookbook&q=abcdefghi"]
request: GET /issues/auto_complete?project_id=ecookbook&q=abcdefghijk (HTTP_COOKIE=_redmine_session=WU42TUpI...)
)
pending_requests = (3) ["/issues/auto_complete?project_id=ecookbook&q=abcdefgh", "/issues/auto_complete?project_id=ecookbook&q=abcdefghi", "/issues/auto_complete?project_id=ecookbook&q=abcdefghij"]
request: GET /issues/auto_complete?project_id=ecookbook&q=abcdefghijkl (HTTP_COOKIE=_redmine_session=WU42TUpI...)
)
pending_requests = (3) ["/issues/auto_complete?project_id=ecookbook&q=abcdefgh", "/issues/auto_complete?project_id=ecookbook&q=abcdefghi", "/issues/auto_complete?project_id=ecookbook&q=abcdefghij"]
pending_requests? = false
```

test_2 result:

```
InlineAutocompleteSystemTest#test_2 =
...
request: GET /my/page (HTTP_COOKIE=_redmine_session=cGhWtktW...)
request: GET /issues/auto_complete?project_id=ecookbook&q=abcde (HTTP_COOKIE=_redmine_session=WU42TUpI...)
request: GET /issues/auto_complete?project_id=ecookbook&q=abcd (HTTP_COOKIE=_redmine_session=WU42TUpI...)
pending_requests = (1) ["/issues/auto_complete?project_id=ecookbook&q=abcde"]
...

Failure:
InlineAutocompleteSystemTest#test_2 [test/application_system_test_case.rb:71]:
Expected: "/login"
Actual: "/my/page"
```

The following can be seen from the above results:

- Autocomplete requests are sent one character at a time.
- The process of waiting for Capybara's pending requests is executed: Capybara::Session#wait_for_pending_requests
- The requests from test_1 are processed in test_2, and the session value is the same as in test_1 (perhaps this is the cause of the login_user failure?).

#8 - 2025-02-11 04:25 - Go MAEDA

- Status changed from New to Resolved
- Assignee set to Go MAEDA
- Resolution set to Fixed

Committed the patches in [r23505](#) and [r23506](#). Thank you for your contribution.

#9 - 2025-02-13 08:54 - Go MAEDA

- Status changed from Resolved to Closed

Merged the fixes into the stable branches.

Files

0001-Fix-random-failures-in-InlineAutocompleteTest-due-to-interfered-by-pending-requests-previous-test.patch	669 Bytes	2025-02-06	Katsuya HIDAHA
0002-Add-missing-assertions-to-InlineAutocompleteTest.patch	2.59 KB	2025-02-03	Katsuya HIDAHA
0001-v2-Fix-random-failures-in-InlineAutocompleteTest-due-to-interfered-by-pending-requests-previous-test.patch	4.02 KB	2025-02-06	Katsuya HIDAHA