

Creating django- capture-on-commit- callbacks

Adam Johnson



This package

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django-capture-on-commit-callbacks 1.2.0

[Latest version](#)

```
pip install django-capture-on-commit-callbacks
```



Released: Jul 15, 2020

Capture and make assertions on `transaction.on_commit()` callbacks.

Navigation

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Statistics

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Project description

CI passing pypi v1.2.0 code style black

Capture and make assertions on `transaction.on_commit()` [callbacks](#). This allows you to write your tests with the `TestCase`, rather than needing the slower `TransactionTestCase` to actually commit the transactions.

This package was made as a first pass for [Django PR #12944](#), which is a solution for [Ticket #30457 "on_commit should be triggered in a TestCase"](#). The PR has been merged to Django and will be released in version 3.2, so this package can now be considered a backport.

Read more in my blog post [The Fast Way to Test Django transaction.on_commit\(\) Callbacks](#).

Installation

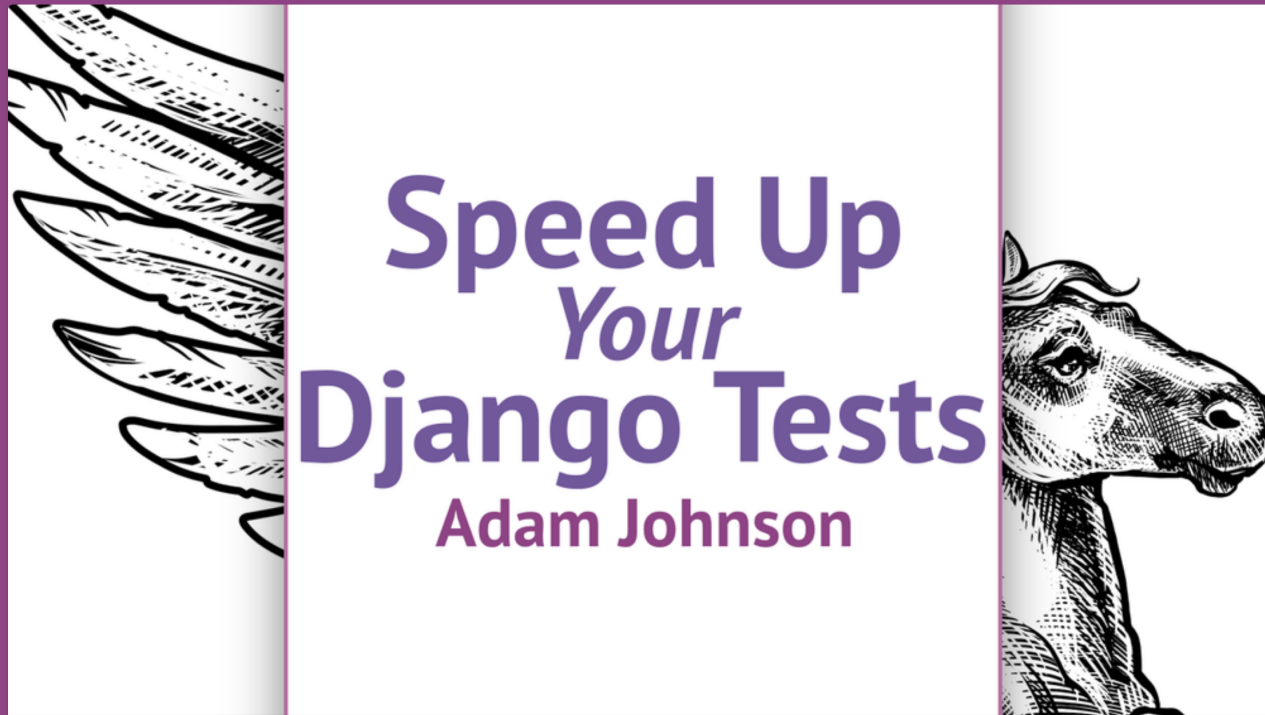
Use `pip`:

```
python -m pip install django-capture-on-commit-callbacks
```

Requirements



“Yak shave” for my book:



Speed Up Your Django Tests

By  Adam Johnson

This book is a practical guide to making your Django project's tests faster. It has many tips and tricks that apply to all projects, big and small. And it covers the two most popular test runners: Django's test framework and pytest.

It's based on my experience speeding up various Django projects' test suites, improving Django's own testing framework, and creating pytest plugins.

Team Size

\$49

Individual / Up to 3 developers

For solo developers and nimble teams.

\$149

Up to 10 developers



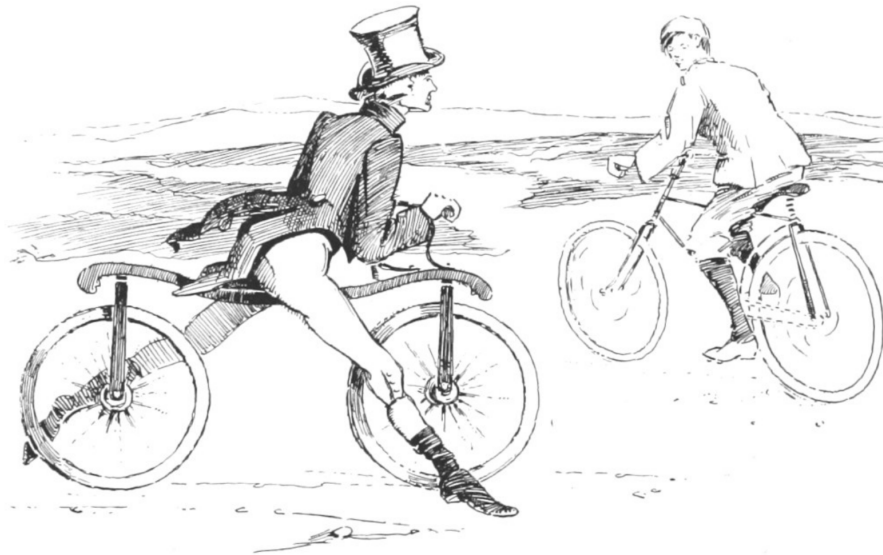
Written up here:

Adam Johnson

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The Fast Way to Test Django `transaction.on_commit()` Callbacks

2020-05-20



Django's `transaction.on_commit()` [hook](#) is useful for running tasks that rely on changes in the current database transaction. The database connection enqueues callback functions passed to `on_commit`, and executes the callbacks after the current transaction commits. If the transaction is rolled back, the callbacks are discarded. This means they act if-and-when the final version of the data is visible to other database connections.



What does it do?

View:

```
def contact(request):  
    if request.method == "POST":  
        form = ContactForm(request.POST)  
        if form.is_valid():  
            @transaction.on_commit  
            def send_email():  
                send_email(form.data)  
            return redirect("/contact")  
    ...
```



What does it do?

Tests without package:

```
class ContactTests(TransactionTestCase):  
    def test_post(self):  
        response = self.client.post(  
            "/contact/",  
            {"message": "I like your site"},  
        )  
  
        self.assertEqual(response.status_code, 200)  
        self.assertEqual(len(callbacks), 1)  
        self.assertEqual(len(mail.outbox), 1)
```



What does it do?

Tests with package:

```
class ContactTests(TestCase):
    def test_post(self):
        with self.captureOnCommitCallbacks(execute=True) \
            as callbacks:
            response = self.client.post(
                "/contact/",
                {"message": "I like your site"},
            )

            self.assertEqual(response.status_code, 200)
            self.assertEqual(len(callbacks), 1)
            self.assertEqual(len(mail.outbox), 1)
```



Why?



The web framework for perfectionists with deadlines.

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#30457 closed New feature (fixed)

Opened 18 months ago
Closed 4 months ago

on_commit should be triggered in a TestCase

Reported by:	Bernhard Mäder	Owned by:	Adam (Chainz) Johnson
Component:	Testing framework	Version:	master
Severity:	Normal	Keywords:	on_commit TestCase
Cc:	Simon Charette, François Freitag, Adam (Chainz) Johnson, Florian Demmer	Triage Stage:	Ready for checkin
Has patch:	yes	Needs documentation:	no
Needs tests:	no	Patch needs improvement:	no
Easy pickings:	no	UI/UX:	no
Pull Requests:	12944 merged, 12761 unmerged, 11805 unmerged		

Description

Testing code which uses `transaction.on_commit()` currently is inconvenient and (for me) confusing, as `on_commit()` is never called because of TestCase's outermost transaction.

[↩ Reply](#)

We use something like this, woven into all those test, to run queued commit hooks on demand:

```
def run_commit_hooks():
    for db_name in settings.DATABASES.keys():
        connection = transaction.get_connection(using=db_name)
```




Why?

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Fixed #30457 -- Added TestCase.captureOnCommitCallbacks() #12944

[Merged](#) felixxm merged 1 commit into [django:master](#) from [adamchainz:ticket_30457](#) on 13 Jul

[Conversation](#) 15 [Commits](#) 1 [Checks](#) 0 [Files changed](#) 5 +137 -4

adamchainz commented on 20 May

Member

[Ticket](#)

I've also released this code as a package: <https://github.com/adamchainz/django-capture-on-commit-callbacks>

adamchainz mentioned this pull request on 20 May

Fixed #30457 -- Doc'd TestCase.on_commit hook behaviour and solution to trigger #11805 Closed

adamchainz force-pushed the [adamchainz:ticket_30457](#) branch 2 times, most recently from [fa08ffd](#) to [98490c3](#) on 20 May

jheld commented on 23 May

Contributor

I don't have the savepoint/rollback code up right now, but I'm curious, does this flow honor if exception handling or custom savepoint/rollback logic is used, the way django (hopefully) does?

So, if an `on_commit` is added during part of a transaction (nested or otherwise), and if the developer either catches an exception in part of the flow, or rollback to a previous savepoint, will this behave the same way as the connection's `on_commit` logic does?

At this point I'm assuming that django handles it correctly/as expected (e.g. removes the `on_commits` which are effectively

Reviewers

felixxm

Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone

Linked issues

Successfully merging this pull request may close these issues.

None yet


Notifications

Customize




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Why?



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 7  1




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[Closed](#)



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Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone

Linked issues

Successfully merging this pull request may close these issues.

None yet

Notifications

Customize

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What is the package?

- `TestCaseMixin` containing `captureOnCommitCallbacks()`
- 23 lines of code, 86 lines of tests.
- Python 3.5 to 3.9 support.
- Django 2.2 to 3.1 support.



Tools: setuptools

setup.cfg

[metadata]

```
name = django-capture-on-commit-callbacks
version = 1.2.0
description = Capture and make assertions on transaction.on_co
long_description = file: README.rst
long_description_content_type = text/x-rst
```



Tools: pytest

With pytest-django and pytest-cov (coverage).

pytest.ini

```
[pytest]
addopts = --cov django_capture_on_commit_callbacks
          --cov-report term-missing:skip-covered
          --cov-fail-under 100
          --cov-config setup.cfg
          --ds=tests.settings
django_find_project = false
```



Tools: tox

tox.ini

```
[tox]
```

```
isolated_build = True
```

```
envlist =
```

```
    py35-django{22}
```

```
    py36-django{22,30,31}
```

```
    py37-django{22,30,31}
```

```
    py38-django{22,30,31}
```

```
    py39-codestyle
```

```
    py39-django{22,30,31}
```

```
[testenv]
```

```
commands = python -W error::DeprecationWarning -W error::Pendi
```



Tools: pre-commit

.pre-commit-config.yaml

```
repos:
- repo: local
  hooks:
  - id: black
    name: black
    entry: .tox/py39-codestyle/bin/black
    language: system
    types: [python]
  - id: check-manifest
    name: check-manifest
    entry: check-manifest
    language: system
    pass_filenames: false
    files: ^MANIFEST\.in$
  - id: flake8
```



Tools: GitHub Actions

.github/workflow/main.yml

```
jobs:
  tests:
    name: Python ${ matrix.python-version }
    runs-on: ubuntu-18.04

    strategy:
      matrix:
        python-version:
          - 3.5
          - 3.6
          - 3.7
          - 3.8
          - 3.9
```




Tools

django-capture-on-commit-callbacks

BUILD

PASSING

PYPI

V1.2.0

CODE STYLE

BLACK



PRE-COMMIT

ENABLED

Thank you! 🙌

- Adam Johnson
- @adamchainz on GitHub & Twitter
- me@adamj.eu
- github.com/adamchainz/talk-django-capture-on-commit-callbacks