Django Inelastic Models Documentation

Release 8.0.1

Release 8.0.1

PSU OIT Web & Mobile Team

May 10, 2025

Contents

Introduction

This package provides a small library for declaratively specifying indexes for Django models using an Elasticsearch back-end.

It requires Django, elasticsearch-dsl and an available Elasticsearch instance.

1.1 Compatibility

The following compatibility matrix summarizes supported versions of the *Elasticsearch* engine.

	ES 1.X	ES 2.X	ES 5.X	ES 6.X	ES 7.X	ES 8.X
1.0	Y	N	N	N	N	N
1.1	Y	N	N	N	N	N
1.2	N	Y	N	N	N	N
7.0	N	N	?[1]	?[1]	Y	?[1]
8.0	N	N	N	N	N	Y

Releases prior to 7.0 unofficially supported a variety of Django release series and did not explicitly indicate supported combinations. No official support or guidance is given for these releases.

	Django 3.2	Django 4.2
7.0	Y	N
8.0	Y	planned

---

[1] Compatibilty is possible but not officially supported.

1.2 Usage

1. Add `inelastic_models` to `INSTALLED_APPS`.

2. Mixin the type `inelastic_models.indexes.SearchMixin` to your models.

3. Implement a type `inelastic_models.indexes.Search` and bind it to models:

```python
from .models import Foo

class FooIndex(Search):
    attribute_fields = ('foo', 'baz')

FooIndex.bind_to_model(Foo)
```

You must define `ELASTICSEARCH_CONNECTIONS`. Pass index and connection parameters to the generated indices and the underlying `Elasticsearch` instance via the `INDEX_OPTIONS` and `CONNECTION_OPTIONS` mappings, respectively:

```python
ELASTICSEARCH_CONNECTIONS = {
    'default': {
        'HOSTS': ['http://localhost:9200'],
        'INDEX_NAME': 'inelastic_models',
        'INDEX_OPTIONS': {
            'number_of_replicas': 3
        },
        'CONNECTION_OPTIONS': {
            'timeout': 42,
            'retry_on_timeout': True
        }
    }
},
```

1.3 Tests

Run tests using the `make` rule:

```
make test [venv=<path>] [python=<python executable name, e.g., 'python3.5'>]
```

It is assumed that you have and Elasticsearch index available at `elasticsearch:9200` and that `virtualenv` available on your path.

Changelog

2.1 8.0.1

2025-05-12

This point release fixes several bugs and addresses shortcomings in the backwards-incompatible 8.0 release series.

This release includes further significant refactoring of the signal- and dependency-handling code and should be considered an immediate replacement of the initial 8.0 release which has been pulled in order to prevent further use in the wild.

2.2 8.0

2025-05-08

This release adds support for, and requires:

- Elasticsearch 8.x.
- elasticsearch-py >=8.18.0
- Django 4.2 LTS.

This release significantly refactors indexing operations and code paths such that:

- reindexing requests are now validated using a builtin evaluator which determines whether or not the index corresponding to a given index should be considered dirty.
- index dependencies are now more rigorously computed as a dependency tree and updates are now properly dispatched to dependent indices.
- additional interfaces have been added to the 'Search' object in order to allow implementations to provide custom logic when considering index updates and dependency dispatching.

2.3 7.1

2022-06-08

This release requires the use of the Django 3.2 LTS.

2.4 7.0

2021-11-23

This release adds support for, and requires, the use of ES 7.x.

This release marks a departure from the previous release strategy. To reduce confusion and to provide better support for a variety of Elasticsearch installations, releases will follow the major ES release versions as is done with the 'elasticsearch-py' and the 'elasticsearch-dsl-py' packages.

- Uses analyzer, tokenizer constructions compatible with ES >= 5.0

- Replaces the use of the 'string' type field with 'text' [ES>=5.0].

- Removes use of 'flush' API [ES>=6].

- Removes support for Python 2 and related compatibility shims.

- Replaces deprecated ngram type names [ES>=8.0].

- Revises index construction to support mapping type removal [ES>=8.0].

- Adds new field 'KitchenSinkField' to replace the functionality of the historical '_all' index field [ES>=6.0].

2.5 1.5

2020-02-27

- Fixes exception handling during chunked indexing.

- Improves performance of 'bulk_prune' operation.

- Fixes erroneous dict modification during iteration.

- Adds missing assertions, guards for empty index requests.

- Adds support for WDT PYPI instance.

2.6 1.4

- Adds explicit support for translated fields.

- Replaces uses of print function.

- Uses memory-efficient record iteration for bulk operations.

2.7 1.3

- Adds support for connection parameter configuration via 'ELASTICSEARCH_CONNECTIONS'.

2.8 1.2

- Enforces a one-to-one relation between Elasticsearch indices and mappings in order to simplify implementation and behavior.

- Retargets to the Elasticsearch 2.x release series.

- Revises incorrect test case specifications.

- Adds new index API 'Search.check_mapping'.

- Adds new management command 'migrate_index'.

2.9 1.1

Adds explicit index-binding.

2.10 1.0

The initial pre-release which serves to replicate 'oro.search' as an external package.