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# **django-geojson Documentation**

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**Makina Corpus**

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## Installation

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```
pip install django-geojson
```

This package has **optional** extra dependencies.

If you need GeoJSON fields with map widgets :

```
pip install "django-geojson [field]"
```

## Configuration

Add `djgeojson` to your applications :

```
# settings.py
INSTALLED_APPS += (
    'djgeojson',
)
```

*(not required for views)*





## GeoJSON layer view

Very useful for web mapping :

```
# urls.py
from djgeojson.views import GeoJSONLayerView
...
url(r'^data.geojson$', GeoJSONLayerView.as_view(model=MushroomSpot), name='data'),
```

Consume the vector layer as usual, for example, with Leaflet loaded with jQuery Ajax:

```
# Leaflet JS
var layer = L.geoJson();
map.addLayer(layer);
$.getJSON("% url 'data' %", function (data) {
    layer.addData(data);
});
```

Inherit generic views **only** if you need a reusable set of options :

```
# views.py
from djgeojson.views import GeoJSONLayerView

class MapLayer(GeoJSONLayerView):
    # Options
    precision = 4 # float
    simplify = 0.5 # generalization

# urls.py
from .views import MapLayer, MeetingLayer
...
url(r'^mushrooms.geojson$', MapLayer.as_view(model=MushroomSpot, properties=('name',)), name='mushrooms')
```

Most common use-cases of reusable options are: low-fi precision, common list of fields between several views, etc.

Options are :

- **properties** : list of properties names, or dict for mapping field names and properties
- **simplify** : generalization of geometries (See `simplify()`)
- **precision** : number of digit after comma

- **geometry\_field** : name of geometry field (*default*: geom)
- **srid** : projection (*default*: 4326, for WGS84)
- **bbox** : Allows you to set your own bounding box on feature collection level
- **bbox\_auto** : True/False (default false). Will automatically generate a bounding box on a per feature level.
- **use\_natural\_keys** : serialize natural keys instead of primary keys (*default*: False)

## Tiled GeoJSON layer view

Vectorial tiles can help display a great number of objects on the map, with [reasonable performance](#).

```
# urls.py
from django.views import TiledGeoJSONLayerView
...

url(r'^data/(?P<z>\d+)/(?P<x>\d+)/(?P<y>\d+).geojson$',
    TiledGeoJSONLayerView.as_view(model=MushroomSpot), name='data'),
```

Consume the vector tiles using [Leaflet TileLayer GeoJSON](#), [Polymaps](#), [OpenLayers 3](#) or [d3.js](#) for example.

Options are :

- **trim\_to\_boundary** : if True geometries are trimmed to the tile boundary
- **simplifications** : a dict of simplification values by zoom level

## GeoJSON template filter

Mainly useful to dump features in HTML output and bypass AJAX call :

```
// Leaflet JS
L.geoJson({{ object_list|geojsonfeature|safe }}).addTo(map);
```

Will work either for a model, a geometry field or a queryset.

```
{% load geojson_tags %}

var feature = {{ object|geojsonfeature|safe }};

var geom = {{ object.geom|geojsonfeature|safe }};

var collection = {{ object_list|geojsonfeature|safe }};
```

Properties and custom geometry field name can be provided.

```
{{ object|geojsonfeature:"name,age" }}
{{ object|geojsonfeature:"name,age:the_geom" }}
{{ object|geojsonfeature":geofield" }}
```

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## Model and forms fields

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GeoJSON fields are based on Brad Jasper's `JSONField`. See [Installation](#) to install extra dependencies.

They are useful to avoid usual GIS stacks (GEOS, GDAL, PostGIS...) for very simple use-cases (no spatial operation yet).

```
from djgeojson.fields import PointField

class Address(models.Model):
    geom = PointField()

address = Address()
address.geom = {'type': 'Point', 'coordinates': [0, 0]}
address.save()
```

Form widgets are rendered with Leaflet maps automatically if `django-leaflet` is available.

All geometry types are supported and respectively validated : *GeometryField*, *PointField*, *MultiPointField*, *LineStringField*, *MultiLineStringField*, *PolygonField*, *MultiPolygonField*, *GeometryCollectionField*.



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## Advanced usage

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### Low-level serializer

```
from djgeojson.serializers import Serializer as GeoJSONSerializer
GeoJSONSerializer().serialize(Restaurants.objects.all(), use_natural_keys=True, with_modelname=False)
```

### Low-level deserializer

```
from djgeojson.serializers import Serializer as GeoJSONSerializer
GeoJSONSerializer().deserialize('geojson', my_geojson)
```

You can optionally specify the model name directly in the parameters:

```
GeoJSONSerializer().deserialize('geojson', my_geojson, model_name=my_model_name)
```

### Dump GIS models, or fixtures

Register the serializer in your project :

```
# settings.py
SERIALIZATION_MODULES = {
    'geojson' : 'djgeojson.serializers'
}
```

Command-line `dumpdata` can export files, viewable in GIS software like QGIS :

```
python manage.py dumpdata --format=geojson yourapp.Model > export.geojson
```

Works with `loaddata` as well, which can now import GeoJSON files.



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## Indices and tables

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