
drf-yasg Documentation

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drf-yasg - Yet another Swagger generator

Generate **real** Swagger/OpenAPI 2.0 specifications from a Django Rest Framework API.

Compatible with

- **Django Rest Framework:** 3.7
- **Django:** 1.11, 2.0
- **Python:** 2.7, 3.4, 3.5, 3.6

Source: <https://github.com/axnsan12/drf-yasg/>

Documentation: <https://drf-yasg.readthedocs.io/en/latest/>

1.1 Features

- full support for nested Serializers and Schemas
- response schemas and descriptions
- model definitions compatible with codegen tools
- customization hooks at all points in the spec generation process
- JSON and YAML format for spec
- bundles latest version of [swagger-ui](#) and [redoc](#) for viewing the generated documentation
- schema view is cacheable out of the box
- generated Swagger schema can be automatically validated by [swagger-spec-validator](#) or [flex](#)

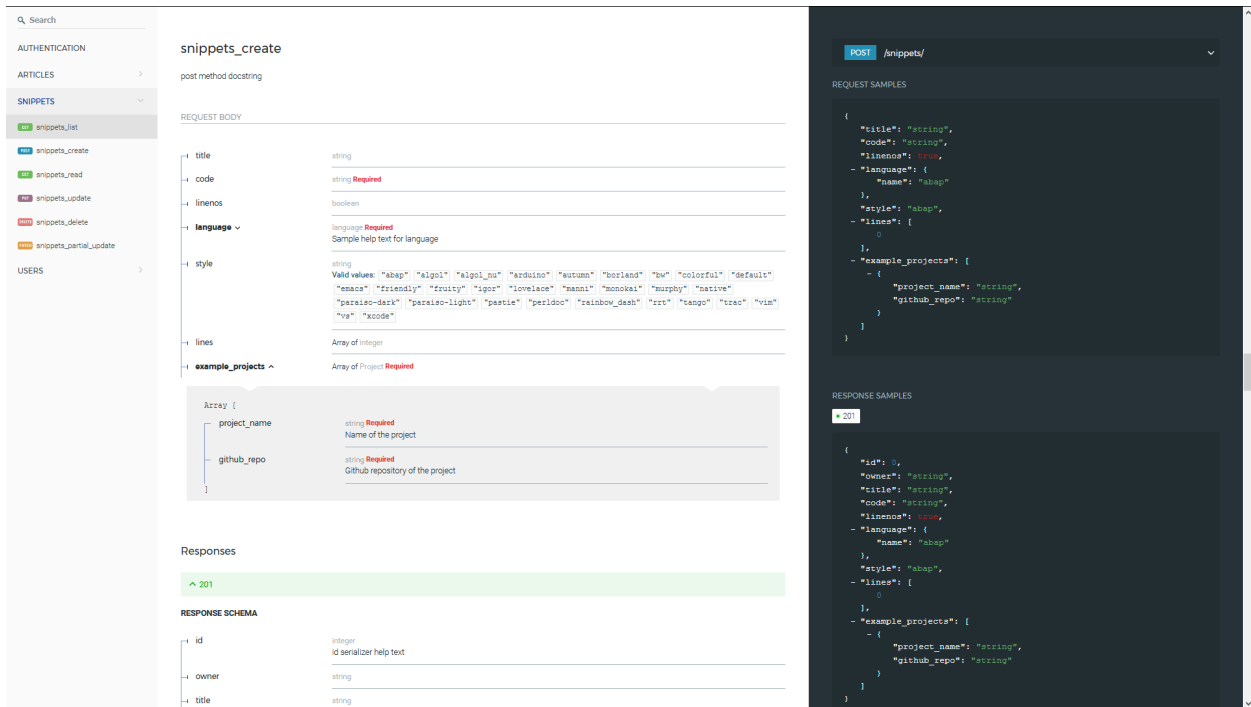


Fig. 1.1: Fully nested request and response schemas.

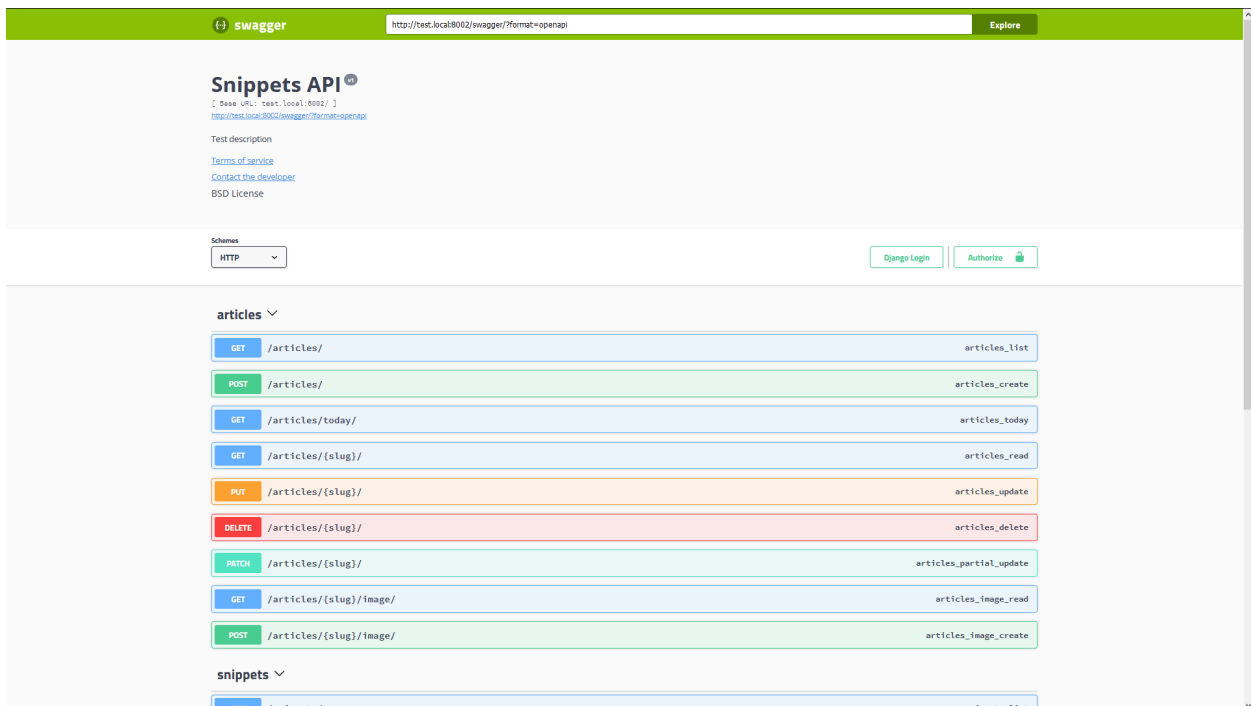


Fig. 1.2: Choose between redoc and swagger-ui.



Fig. 1.3: Real Model definitions.

1.2 Table of contents

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1.3 Usage

1.3.1 0. Installation

The preferred installation method is directly from pypi:

```
pip install drf-yasg
```

Additionally, if you want to use the built-in validation mechanisms (see [4. Validation](#)), you need to install some extra requirements:

```
pip install drf-yasg[validation]
```

1.3.2 1. Quickstart

In `settings.py`:

```
INSTALLED_APPS = [  
    ...  
    'drf_yasg',  
    ...  
]
```

In `urls.py`:

```
...  
from drf_yasg.views import get_schema_view  
from drf_yasg import openapi  
...  
  
schema_view = get_schema_view(  
    openapi.Info(  
        title="Snippets API",  
        default_version='v1',  
        description="Test description",  
        terms_of_service="https://www.google.com/policies/terms/",  
        contact=openapi.Contact(email="contact@snippets.local"),  
        license=openapi.License(name="BSD License"),  
    ),  
    validators=['ssv', 'flex'],  
    public=True,  
    permission_classes=(permissions.AllowAny,),  
)
```



```
urlpatterns = [
    url(r'^swagger(?P<format>.json|.yaml)$', schema_view.without_ui(cache_
↪timeout=None), name='schema-json'),
    url(r'^swagger/$', schema_view.with_ui('swagger', cache_timeout=None), name=
↪'schema-swagger-ui'),
    url(r'^redoc/$', schema_view.with_ui('redoc', cache_timeout=None), name='schema-
↪redoc'),
    ...
]
```

This exposes 4 cached, validated and publicly available endpoints:

- A JSON view of your API specification at `/swagger.json`
- A YAML view of your API specification at `/swagger.yaml`
- A swagger-ui view of your API specification at `/swagger/`
- A ReDoc view of your API specification at `/redoc/`

1.3.3 2. Configuration

a. `get_schema_view` parameters

- `info` - Required. Swagger API Info object
- `url` - API base url; if left blank will be deduced from the location the view is served at
- `patterns` - passed to SchemaGenerator
- `urlconf` - passed to SchemaGenerator
- `public` - if False, includes only endpoints the current user has access to
- `validators` - a list of validator names to apply on the generated schema; allowed values are `flex`, `ssv`
- `authentication_classes` - authentication classes for the schema view itself
- `permission_classes` - permission classes for the schema view itself

b. SchemaView options

- `SchemaView.with_ui(renderer, cache_timeout, cache_kwargs)` - get a view instance using the specified UI renderer; one of `swagger`, `redoc`
- `SchemaView.without_ui(cache_timeout, cache_kwargs)` - get a view instance with no UI renderer; same as `as_cached_view` with no kwargs
- `SchemaView.as_cached_view(cache_timeout, cache_kwargs, **initkwargs)` - same as `as_view`, but with optional caching
- you can, of course, call `as_view` as usual

All of the first 3 methods take two optional arguments, `cache_timeout` and `cache_kwargs`; if present, these are passed on to Django's `cached_page` decorator in order to enable caching on the resulting view. See [3. Caching](#).

C. SWAGGER_SETTINGS and REDOC_SETTINGS

Additionally, you can include some more settings in your `settings.py` file. The possible settings and their default values are as follows:

```
SWAGGER_SETTINGS = {
    'USE_SESSION_AUTH': True, # add Django Login and Django Logout buttons, CSRF_
    ↪token to swagger UI page
    'LOGIN_URL': getattr(django.conf.settings, 'LOGIN_URL', None), # URL for the_
    ↪login button
    'LOGOUT_URL': getattr(django.conf.settings, 'LOGOUT_URL', None), # URL for the_
    ↪logout button

    # Swagger security definitions to include in the schema;
    # see https://github.com/OAI/OpenAPI-Specification/blob/master/versions/2.0.md
    ↪#security-definitions-object
    'SECURITY_DEFINITIONS': {
        'basic': {
            'type': 'basic'
        }
    },

    # url to an external Swagger validation service; defaults to 'http://online.
    ↪swagger.io/validator/'
    # set to None to disable the schema validation badge in the UI
    'VALIDATOR_URL': '',

    # swagger-ui configuration settings, see https://github.com/swagger-api/swagger-
    ↪ui/blob/112bca906553a937ac67adc2e500bdeed96d067b/docs/usage/configuration.md
    ↪#parameters
    'OPERATIONS_SORTER': None,
    'TAGS_SORTER': None,
    'DOC_EXPANSION': 'list',
    'DEEP_LINKING': False,
    'SHOW_EXTENSIONS': True,
    'DEFAULT_MODEL_RENDERING': 'model',
    'DEFAULT_MODEL_DEPTH': 3,
}
```

```
REDOC_SETTINGS = {
    # ReDoc UI configuration settings, see https://github.com/Rebilly/ReDoc#redoc-tag-
    ↪attributes
    'LAZY_RENDERING': True,
    'HIDE_HOSTNAME': False,
    'EXPAND_RESPONSES': 'all',
    'PATH_IN_MIDDLE': False,
}
```

1.3.4 3. Caching

Since the schema does not usually change during the lifetime of the django process, there is out of the box support for caching the schema view in-memory, with some sane defaults:

- caching is enabled by the `cache_page` decorator, using the default Django cache backend, can be changed using the `cache_kwargs` argument
- HTTP caching of the response is blocked to avoid confusing situations caused by being shown stale schemas

- if `public` is set to `False` on the `SchemaView`, the cached schema varies on the `Cookie` and `Authorization` HTTP headers to enable filtering of visible endpoints according to the authentication credentials of each user; note that this means that every user accessing the schema will have a separate schema cached in memory.

1.3.5 4. Validation

Given the numerous methods to manually customize the generated schema, it makes sense to validate the result to ensure it still conforms to OpenAPI 2.0. To this end, validation is provided at the generation point using python swagger libraries, and can be activated by passing `validators=['ssv', 'flex']` to `get_schema_view`; if the generated schema is not valid, a `SwaggerValidationError` is raised by the handling codec.

Warning: This internal validation can slow down your server. Caching can mitigate the speed impact of validation.

The provided validation will catch syntactic errors, but more subtle violations of the spec might slip by them. To ensure compatibility with code generation tools, it is recommended to also employ one or more of the following methods:

swagger-ui validation badge

Online

If your schema is publicly accessible, `swagger-ui` will automatically validate it against the official swagger online validator and display the result in the bottom-right validation badge.

Offline

If your schema is not accessible from the internet, you can run a local copy of `swagger-validator` and set the `VALIDATOR_URL` accordingly:

```
SWAGGER_SETTINGS = {
    ...
    'VALIDATOR_URL': 'http://localhost:8189',
    ...
}
```

```
$ docker run --name swagger-validator -d -p 8189:8080 --add-host test.local:10.0.75.1_
↪ swaggerapi/swagger-validator
84dabd52ba967c32ae6b660934fa6a429ca6bc9e594d56e822a858b57039c8a2
$ curl http://localhost:8189/debug?url=http://test.local:8002/swagger/?format=openapi
{}
```

Using swagger-cli

<https://www.npmjs.com/package/swagger-cli>

```
$ npm install -g swagger-cli
[...]
```

```
$ swagger-cli validate http://test.local:8002/swagger.yaml
http://test.local:8002/swagger.yaml is valid
```

Manually on editor.swagger.io

Importing the generated spec into <https://editor.swagger.io/> will automatically trigger validation on it. This method is currently the only way to get both syntactic and semantic validation on your specification. The other validators only provide JSON schema-level validation, but miss things like duplicate operation names, improper content types, etc

1.3.6 5. Code generation

You can use the specification outputted by this library together with `swagger-codegen` to generate client code in your language of choice:

```
$ docker run --rm -v ${PWD}:/local swaggerapi/swagger-codegen-cli generate -i /local/  
↳tests/reference.yaml -l javascript -o /local/.codegen/js
```

See the github page linked above for more details.

1.4 Background

OpenAPI 2.0/Swagger is a format designed to encode information about a Web API into an easily parsable schema that can then be used for rendering documentation, generating code, etc.

More details are available on swagger.io and on the [OpenAPI 2.0 specification page](#).

From here on, the terms “OpenAPI” and “Swagger” are used interchangeably.

1.4.1 Swagger in Django Rest Framework

Since Django Rest 3.7, there is now [built in support](#) for automatic OpenAPI 2.0 schema generation. However, this generation is based on the `coreapi` standard, which for the moment is vastly inferior to OpenAPI in both features and tooling support. In particular, the OpenAPI codec/compatibility layer provided has a few major problems:

- there is no support for documenting response schemas and status codes
- nested schemas do not work properly
- does not handle more complex fields such as `FileField`, `ChoiceField`, ...

In short this makes the generated schema unusable for code generation, and mediocre at best for documentation.

1.4.2 Other libraries

There are currently two decent Swagger schema generators that I could find for `django-rest-framework`:

- `django-rest-swagger`
- `drf-openapi`

Out of the two, `django-rest-swagger` is just a wrapper around DRF 3.7 schema generation with an added UI, and thus presents the same problems. `drf-openapi` is a bit more involved and implements some custom handling for response schemas, but ultimately still falls short in code generation because the responses are plain of lacking support for named schemas.

Both projects are also currently unmaintained.

1.4.3 Documentation, advanced usage

<https://drf-yasg.readthedocs.io/en/latest/>

2.1 `get_schema_view` and the `SchemaView` class

The `get_schema_view()` function and the `SchemaView` class it returns (click links for documentation) are intended to cover the majority of use cases one might want to configure. The class returned by `get_schema_view()` can be used to obtain view instances via `SchemaView.with_ui()`, `SchemaView.without_ui()` and `SchemaView.as_cached_view()` - see *1. Quickstart* in the README for a usage example.

You can also subclass `SchemaView` by extending the return value of `get_schema_view()`, e.g.:

```
SchemaView = get_schema_view(info, ...)

class CustomSchemaView(SchemaView):
    generator_class = CustomSchemaGenerator
    renderer_classes = (CustomRenderer1, CustomRenderer2,)
```

2.2 Renderers and codecs

If you need to modify how your Swagger spec is presented in views, you might want to override one of the renderers in `renderers` or one of the codecs in `codecs`. The codec is the last stage where the Swagger object arrives before being transformed into bytes, while the renderer is the stage responsible for tying together the codec and the view.

You can use your custom renderer classes as kwargs to `SchemaView.as_cached_view()` or by subclassing `SchemaView`.

Custom schema generation

If the default spec generation does not quite match what you were hoping to achieve, `drf-yasg` provides some custom behavior hooks by default.

3.1 Swagger spec overview

This library generates OpenAPI 2.0 documents. The authoritative specification for this document's structure will always be the official documentation over at swagger.io and the [OpenAPI 2.0 specification page](#).

Because the above specifications are a bit heavy and convoluted, here is a general overview of how the specification is structured, starting from the root `Swagger` object.

- **Swagger object**
 - `info`, `schemes`, `securityDefinitions` and other informative attributes
 - **paths: Paths object** A list of all the paths in the API in the form of a mapping
 - * **{path}: PathItem** - each *PathItem* has multiple operations keyed by method
 - **{http_method}: Operation** Each operation is thus uniquely identified by its (path, http_method) combination, e.g. GET /articles/, POST /articles/, etc.
 - `parameters: [Parameter]` - and a list of path parameters
 - **definitions: named Models** A list of all the named models in the API in the form of a mapping
 - * `{modelName}: Schema`
- **Operation contains the following information about each operation:**
 - **parameters: [Parameter]** A list of all the *query*, *header* and *form* parameters accepted by the operation.
 - * there can also be **at most one** body parameter whose structure is represented by a *Schema* or a reference to one (*SchemaRef*)

- **responses:** *Responses* A list of all the possible responses the operation is expected to return. Each response can optionally have a *Schema* which describes the structure of its body.
 - * {status_code}: *Response* - mapping of status code to response definition
- `operationId` - should be unique across all operations
- `tags` - used to group operations in the listing

It is interesting to note the main differences between *Parameter* and *Schema* objects:

| <i>Schema</i> | <i>Parameter</i> |
|--|---|
| Can nest other Schemas | Cannot nest other Parameters Can only nest a Schema if the parameter is in: <code>body</code> |
| Cannot describe file uploads - <code>file</code> is not permitted as a value for <code>type</code> | Can describe file uploads via <code>type = file</code> , but only as part of a form <i>Operation</i> ¹ |
| Can be used in <i>Responses</i> | Cannot be used in <i>Responses</i> |
| Cannot be used in form <i>Operations</i> ¹ | Can be used in form <i>Operations</i> ¹ |
| Can only describe request or response bodies | Can describe query, form, header or path parameters |

3.2 Default behavior

This section describes where information is sourced from when using the default generation process.

- *Paths* are generated by exploring the patterns registered in your default `urlpatterns`, or the patterns and `urlpatterns` you specified when constructing *OpenAPISchemaGenerator*; only views inheriting from Django Rest Framework's `APIView` are looked at, all other views are ignored
- *path Parameters* are generated by looking in the URL pattern for any template parameters; attempts are made to guess their type from the views `queryset` and `lookup_field`, if applicable. You can override path parameters via `manual_parameters` in `@swagger_auto_schema`.
- *query Parameters* - i.e. parameters specified in the URL as `/path/?query1=value&query2=value` - are generated from your view's `filter_backends` and `paginator`, if any are declared. Additional parameters can be specified via the `query_serializer` and `manual_parameters` arguments of `@swagger_auto_schema`
- The request body is only generated for the HTTP POST, PUT and PATCH methods, and is sourced from the view's `serializer_class`. You can also override the request body using the `request_body` argument of `@swagger_auto_schema`.
 - if the view represents a form request (that is, all its parsers are of the `multipart/form-data` or `application/x-www-form-urlencoded` media types), the request body will be output as *form Parameters*
 - if it is not a form request, the request body will be output as a single *body Parameter* wrapped around a *Schema*
- *header Parameters* are supported by the OpenAPI specification but are never generated by this library; you can still add them using `manual_parameters`.
- *Responses* are generated as follows:

¹ a form *Operation* is an *Operation* that consumes `multipart/form-data` or `application/x-www-form-urlencoded` content

- a form *Operation* cannot have `body` parameters
- a non-form operation cannot have `form` parameters

- if `responses` is provided to `@swagger_auto_schema` and contains at least one success status code (i.e. any 2xx status code), no automatic response is generated and the given response is used as described in the `@swagger_auto_schema` documentation
- otherwise, an attempt is made to generate a default response:
 - * the success status code is assumed to be 204 for `DELETE` requests, 201 for POST requests, and 200 for all other request methods
 - * if the view has a request body, the same `Serializer` or `Schema` as in the request body is used in generating the `Response` schema; this is inline with the default `GenericAPIView` and `GenericViewSet` behavior
 - * if the view has no request body, its `serializer_class` is used to generate the `Response` schema
 - * if the view is a list view (as defined by `is_list_view()`), the response schema is wrapped in an array
 - * if the view is also paginated, the response schema is then wrapped in the appropriate paging response structure
 - * the description of the response is left blank
- `Response` headers are supported by the OpenAPI specification but not currently supported by this library; you can still add them manually by providing an appropriately structured dictionary to the `headers` property of a `Response` object
- `descriptions` for `Operations`, `Parameters` and `Schemas` are picked up from docstrings and `help_text` attributes in the same manner as the default DRF `SchemaGenerator`

3.3 The `@swagger_auto_schema` decorator

You can use the `@swagger_auto_schema` decorator on view functions to override some properties of the generated `Operation`. For example, in a `ViewSet`,

```
@swagger_auto_schema(operation_description="partial_update description override",
↳responses={404: 'slug not found'})
def partial_update(self, request, *args, **kwargs):
    """partial_update method docstring"""
    ...
```

will override the description of the `PATCH /article/{id}/` operation, and document a 404 response with no body and the given description.

Where you can use the `@swagger_auto_schema` decorator depends on the type of your view:

- for function based `@api_views`, because the same view can handle multiple methods, and thus represent multiple operations, you have to add the decorator multiple times if you want to override different operations:

```
test_param = openapi.Parameter('test', openapi.IN_QUERY, description=
↳"test manual param", type=openapi.TYPE_BOOLEAN)
user_response = openapi.Response('response description', UserSerializer)

# 'method' can be used to customize a single HTTP method of a view
@swagger_auto_schema(method='get', manual_parameters=[test_param],
↳responses={200: user_response})
# 'methods' can be used to apply the same modification to multiple
↳methods
```

```

@swagger_auto_schema (methods=['put', 'post'], request_
↳body=UserSerializer)
@api_view(['GET', 'PUT', 'POST'])
def user_detail(request, pk):
    ...

```

- for class based APIView, GenericAPIView and non-ViewSet derivatives, you have to decorate the respective method of each operation:

```

class UserList (APIView):
    @swagger_auto_schema (responses={200: UserSerializer (many=True)})
    def get (self, request):
        ...

    @swagger_auto_schema (operation_description="description")
    def post (self, request):
        ...

```

- for ViewSet, GenericViewSet, ModelViewSet, because each viewset corresponds to multiple **paths**, you have to decorate the *action methods*, i.e. list, create, retrieve, etc. Additionally, @list_routes or @detail_routes defined on the viewset, like function based api views, can respond to multiple HTTP methods and thus have multiple operations that must be decorated separately:

```

class ArticleViewSet (viewsets.ModelViewSet):
    # method or 'methods' can be skipped because the list_route only_
↳handles a single method (GET)
    @swagger_auto_schema (operation_description='GET /articles/today/')
    @list_route (methods=['get'])
    def today (self, request):
        ...

    @swagger_auto_schema (method='get', operation_description="GET /
↳articles/{id}/image/")
    @swagger_auto_schema (method='post', operation_description="POST /
↳articles/{id}/image/")
    @detail_route (methods=['get', 'post'], parser_
↳classes=(MultiPartParser,))
    def image (self, request, id=None):
        ...

    @swagger_auto_schema (operation_description="PUT /articles/{id}/")
    def update (self, request, *args, **kwargs):
        ...

    @swagger_auto_schema (operation_description="PATCH /articles/{id}/")
    def partial_update (self, request, *args, **kwargs):
        ...

```

Tip: If you want to customize the generation of a method you are not implementing yourself, you can use `swagger_auto_schema` in combination with Django's `method_decorator`:

```

@method_decorator (name='list', decorator=swagger_auto_schema (
    operation_description="description from swagger_auto_schema via method_decorator"
))
class ArticleViewSet (viewsets.ModelViewSet):
    ...

```

This allows you to avoid unnecessarily overriding the method.

Tip: You can go even further and directly decorate the result of `as_view`, in the same manner you would override an `@api_view` as described above:

```
decorated_login_view = \
    swagger_auto_schema(
        method='post',
        responses={status.HTTP_200_OK: LoginResponseSerializer}
    )(LoginView.as_view())

urlpatterns = [
    ...
    url(r'^login/$', decorated_login_view, name='login')
]
```

This can allow you to avoid skipping an unnecessary *subclass* altogether.

Warning: However, do note that both of the methods above can lead to unexpected (and maybe surprising) results by replacing/decorating methods on the base class itself.

3.4 Subclassing and extending

For more advanced control you can subclass `SwaggerAutoSchema` - see the documentation page for a list of methods you can override.

You can put your custom subclass to use by setting it on a view method using the `@swagger_auto_schema` decorator described above.

If you need to control things at a higher level than `Operation` objects (e.g. overall document structure, vendor extensions in metadata) you can also subclass `OpenAPISchemaGenerator` - again, see the documentation page for a list of its methods.

This custom generator can be put to use by setting it as the `generator_class` of a `SchemaView` using `get_schema_view()`.

CHAPTER 4

Customizing the web UI

There is currently no pluggable way of customizing the web UI apart from the settings available in *Swagger UI settings* and *ReDoc UI settings*. If you really need to, you can override one of the `drf-yasg/swagger-ui.html` or `drf-yasg/redoc.html` templates that are used for rendering.

Settings are configurable in `settings.py` by defining `SWAGGER_SETTINGS` or `REDOC_SETTINGS`.

Example:

settings.py

```
SWAGGER_SETTINGS = {
    'SECURITY_DEFINITIONS': {
        'basic': {
            'type': 'basic'
        }
    },
    ...
}

REDOC_SETTINGS = {
    'LAZY_RENDERING': True,
    ...
}
```

The possible settings and their default values are as follows:

5.1 SWAGGER_SETTINGS

5.1.1 Authorization

USE_SESSION_AUTH

Enable/disable Django login as an authentication/authorization mechanism. If `True`, a login/logout button will be displayed in Swagger UI.

Default: `True`

LOGIN_URL

URL for the Django Login action when using `USE_SESSION_AUTH`.

Default: `django.conf.settings.LOGIN_URL`

LOGOUT_URL

URL for the Django Logout action when using `USE_SESSION_AUTH`.

Default: `django.conf.settings.LOGOUT_URL`

SECURITY_DEFINITIONS

Swagger security definitions to be included in the specification. See <https://github.com/OAI/OpenAPI-Specification/blob/master/versions/2.0.md#security-definitions-object>.

Default:

```
'basic': {
  'type': 'basic'
}
```

5.1.2 Swagger UI settings

Swagger UI configuration settings. See <https://github.com/swagger-api/swagger-ui/blob/112bca906553a937ac67adc2e500bdeed96d067b/docs/usage/configuration.md#parameters>.

VALIDATOR_URL

URL pointing to a swagger-validator instance; used for the validation badge shown in swagger-ui. Can be modified to point to a local install of `swagger-validator` or set to `None` to remove the badge.

Default: `'http://online.swagger.io/validator/'` *Maps to parameter:* `validatorUrl`

OPERATIONS_SORTER

Sorting order for the operation list of each tag.

- `None`: show in the order returned by the server
- `alpha`: sort alphabetically by path
- `method`: sort by HTTP method

Default: `None` *Maps to parameter:* `operationsSorter`

TAGS_SORTER

Sorting order for tagged operation groups.

- `None`: Swagger UI default ordering
- `alpha`: sort alphabetically

Default: None *Maps to parameter:* tagsSorter

DOC_EXPANSION

Controls the default expansion setting for the operations and tags.

- None: everything is collapsed
- list: only tags are expanded
- full: all operations are expanded

Default: 'list' *Maps to parameter:* docExpansion

DEEP_LINKING

Automatically update the fragment part of the URL with permalinks to the currently selected operation.

Default: False *Maps to parameter:* deepLinking

SHOW_EXTENSIONS

Show vendor extension (x- . .) fields.

Default: True *Maps to parameter:* showExtensions

DEFAULT_MODEL_RENDERING

Controls whether operations show the model structure or the example value by default.

- model: show the model fields by default
- example: show the example value by default

Default: 'model' *Maps to parameter:* defaultModelRendering

DEFAULT_MODEL_DEPTH

Controls how many levels are expanded by default when showing nested models.

Default: 3 *Maps to parameter:* defaultModelExpandDepth

5.2 REDOC_SETTINGS

5.2.1 ReDoc UI settings

ReDoc UI configuration settings. See <https://github.com/Rebilly/ReDoc#redoc-tag-attributes>.

LAZY_RENDERING

Default: True *Maps to attribute:* lazy-rendering

HIDE_HOSTNAME

Default: False *Maps to attribute:* hide-hostname

EXPAND_RESPONSES

Default: 'all' *Maps to attribute:* expand-responses

PATH_IN_MIDDLE

Default: False *Maps to attribute:* path-in-middle-panel

Contributions are always welcome and appreciated! Here are some ways you can contribute.

6.1 Issues

You can and should open an issue for any of the following reasons:

- you found a bug; steps for reproducing, or a pull request with a failing test case will be greatly appreciated
- you wanted to do something but did not find a way to do it after reading the documentation
- you believe the current way of doing something is more complicated or less elegant than it can be
- a related feature that you want is missing from the package

Please always check for existing issues before opening a new issue.

6.2 Pull requests

You want to contribute some code? Great! Here are a few steps to get you started:

1. Fork the repository on GitHub
2. Clone your fork and create a branch for the code you want to add
3. Create a new virtualenv and install the package in development mode

```
$ virtualenv venv
$ source venv/bin/activate
(venv) $ pip install -e .[validation]
(venv) $ pip install -rrequirements/dev.txt -rrequirements/test.txt
```

4. Make your changes and check them against the test project

```
(venv) $ cd testproj
(venv) $ python manage.py runserver
(venv) $ curl localhost:8000/swagger.yaml
```

5. Update the tests if necessary

You can find them in the `tests` directory.

If your change modifies the expected schema output, you should download the new generated `swagger.yaml`, diff it against the old reference output in `tests/reference.yaml`, and replace it after checking that no unexpected changes appeared.

6. Run tests. The project is setup to use tox and pytest for testing

```
# run tests in the current environment, faster than tox
(venv) $ pytest --cov
# (optional) run tests for other python versions in separate environments
(venv) $ tox
```

7. Update documentation

If the change modifies behaviour or adds new features, you should update the documentation and `README.rst` accordingly. Documentation is written in reStructuredText and built using Sphinx. You can find the sources in the `docs` directory.

To build and check the docs, run

```
(venv) $ tox -e docs
```

8. Push your branch and submit a pull request to the master branch on GitHub

Incomplete/Work In Progress pull requests are encouraged, because they allow you to get feedback and help more easily.

9. Your code must pass all the required travis jobs before it is merged. As of now, this includes running on Python 2.7, 3.4, 3.5 and 3.6, and building the docs succesfully.

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8.1 1.0.6

- **FIXED:** Swagger UI “Try it out!” should now work with Django login
- **FIXED:** callable default values on serializer fields will now be properly called (#24, #25)
- **IMPROVED:** updated `swagger-ui` to version 3.8.0
- **IMPROVED:** `PrimaryKeyRelatedField` and `SlugRelatedField` will now have appropriate types based on the related model (#26)
- **IMPROVED:** mock views will now have a bound request even with `public=False` (#23)

8.2 1.0.5

- **FIXED:** fixed a crash caused by having read-only Serializers nested by reference
- **FIXED:** removed erroneous backslashes in paths when routes are generated using Django 2 `path()`
- **IMPROVED:** updated `swagger-ui` to version 3.7.0
- **IMPROVED:** `FileField` is now generated as an URL or file name in response Schemas (#21, thanks to @h-hiroakawa)

8.3 1.0.4

- **FIXED:** fixed improper generation of YAML references
- **ADDED:** added `query_serializer` parameter to `@swagger_auto_schema` (#16, #17)

8.4 1.0.3

- **FIXED:** fixed bug that caused schema views returned from cache to fail (#14)
- **FIXED:** disabled automatic generation of response schemas for form operations to avoid confusing errors caused by attempting to shove file parameters into Schema objects

8.5 1.0.2

- First published version

- [genindex](#)
- [modindex](#)
- [search](#)

9.1 drf_yasg package

9.1.1 drf_yasg.app_settings

class `drf_yasg.app_settings.AppSettings` (*user_settings, defaults, import_strings=None*)
Bases: `object`

Stolen from Django Rest Framework, removed caching for easier testing

user_settings

`drf_yasg.app_settings.swagger_settings` = `<drf_yasg.app_settings.AppSettings object>`

`drf_yasg.app_settings.redoc_settings` = `<drf_yasg.app_settings.AppSettings object>`

9.1.2 drf_yasg.codecs

`drf_yasg.codecs._validate_flex` (*spec, codec*)

`drf_yasg.codecs._validate_swagger_spec_validator` (*spec, codec*)

`drf_yasg.codecs.VALIDATORS` = `{'flex': <function _validate_flex>, 'ssv': <function _valida`

class `drf_yasg.codecs._OpenAPICodec` (*validators*)
Bases: `object`

media_type = `None`

validators

List of validator names to apply

encode (*document*)

Transform an *Swagger* object to a sequence of bytes.

Also performs validation and applies settings.

Parameters **document** (*openapi.Swagger*) – Swagger spec object as generated by *OpenAPISchemaGenerator*

Returns binary encoding of document

Return type bytes

encode_error (*err*)

Dump an error message into an encoding-appropriate sequence of bytes

_dump_dict (*spec*)

Dump the given dictionary into its string representation.

Parameters **spec** (*dict*) – a python dict

Returns string representation of spec

Return type str

generate_swagger_object (*swagger*)

Generates the root Swagger object.

Parameters **swagger** (*openapi.Swagger*) – Swagger spec object as generated by *OpenAPISchemaGenerator*

Returns swagger spec as dict

Return type OrderedDict

class *drf_yasg.codecs.OpenAPICodecJson* (*validators*)

Bases: *drf_yasg.codecs._OpenAPICodec*

media_type = 'application/json'

_dump_dict (*spec*)

Dump spec into JSON.

drf_yasg.codecs.yaml_sane_dump (*data*, *binary*)

Dump the given data dictionary into a sane format:

- OrderedDicts are dumped as regular mappings instead of non-standard !!odict
- multi-line mapping style instead of json-like inline style
- list elements are indented into their parents
- YAML references/aliases are disabled

Parameters

- **data** (*dict*) – the data to be serializers

- **binary** (*bool*) – True to return a utf-8 encoded binary object, False to return a string

Returns the serialized YAML

Return type str,bytes

class *drf_yasg.codecs.OpenAPICodecYaml* (*validators*)

Bases: *drf_yasg.codecs._OpenAPICodec*

media_type = 'application/yaml'

`_dump_dict` (*spec*)
Dump spec into YAML.

9.1.3 drf_yasg.errors

exception `drf_yasg.errors.SwaggerError`
Bases: `Exception`

exception `drf_yasg.errors.SwaggerValidationError` (*msg*, *validator_name*, *spec*,
source_codec, *args)
Bases: `drf_yasg.errors.SwaggerError`

exception `drf_yasg.errors.SwaggerGenerationError`
Bases: `drf_yasg.errors.SwaggerError`

9.1.4 drf_yasg.generators

class `drf_yasg.generators.EndpointEnumerator` (*patterns=None*, *urlconf=None*)
Bases: `rest_framework.schemas.generators.EndpointEnumerator`

get_path_from_regex (*path_regex*)

unescape (*s*)

Unescape all backslash escapes from *s*.

Parameters *s* (*str*) – string with backslash escapes

Return type `str`

unescape_path (*path*)

Remove backslashes from all path components outside {parameters}. This is needed because Django >= 2.0 `path()`/`RoutePattern` aggressively escapes all non-parameter path components.

NOTE: this might destructively affect some url regex patterns that contain metacharacters (e.g. `w`, `d`) outside path parameter groups; if you are in this category, God help you

Parameters *path* (*str*) – path possibly containing

Returns the unescaped path

Return type `str`

class `drf_yasg.generators.OpenAPISchemaGenerator` (*info*, *version*, *url=None*, *pat-*
terns=None, *urlconf=None*)

Bases: `object`

This class iterates over all registered API endpoints and returns an appropriate OpenAPI 2.0 compliant schema. Method implementations shamelessly stolen and adapted from `rest_framework` `SchemaGenerator`.

Parameters

- **info** (`Info`) – information about the API
- **version** (*str*) – API version string, takes precedence over the version in *info*
- **url** (*str*) – API
- **patterns** – if given, only these patterns will be enumerated for inclusion in the API spec
- **urlconf** – if *patterns* is not given, use this *urlconf* to enumerate patterns; if not given, the default *urlconf* is used

endpoint_enumerator_classalias of *EndpointEnumerator***get_schema** (*request=None, public=False*)Generate an *Swagger* representing the API schema.**Parameters**

- **request** (*rest_framework.request.Request*) – the request used for filtering accessible endpoints and finding the spec URI
- **public** (*bool*) – if True, all endpoints are included regardless of access through *request*

Returns the generated Swagger specification**Return type** *openapi.Swagger***create_view** (*callback, method, request=None*)

Create a view instance from a view callback as registered in urlpatterns.

Parameters

- **callback** (*callable*) – view callback registered in urlpatterns
- **method** (*str*) – HTTP method
- **request** (*rest_framework.request.Request*) – request to bind to the view

Returns the view instance**get_endpoints** (*request=None*)

Iterate over all the registered endpoints in the API and return a fake view with the right parameters.

Parameters **request** (*rest_framework.request.Request*) – request to bind to the endpoint views**Returns** {path: (view_class, list[(http_method, view_instance)])}**Return type** dict**get_operation_keys** (*subpath, method, view*)

Return a list of keys that should be used to group an operation within the specification.

```
/users/                ("users", "list"), ("users", "create")
/users/{pk}/          ("users", "read"), ("users", "update"), ("users",
↪"delete")
/users/enabled/       ("users", "enabled") # custom viewset list action
/users/{pk}/star/    ("users", "star") # custom viewset detail_
↪action
/users/{pk}/groups/  ("users", "groups", "list"), ("users", "groups",
↪"create")
/users/{pk}/groups/{pk}/ ("users", "groups", "read"), ("users", "groups",
↪"update")
```

Parameters

- **subpath** (*str*) – path to the operation with any common prefix/base path removed
- **method** (*str*) – HTTP method
- **view** – the view associated with the operation

Return type tuple

get_paths (*endpoints, components, public*)

Generate the Swagger Paths for the API from the given endpoints.

Parameters

- **endpoints** (*dict*) – endpoints as returned by `get_endpoints`
- **components** (`ReferenceResolver`) – resolver/container for Swagger References
- **public** (*bool*) – if True, all endpoints are included regardless of access through *request*

Return type `openapi.Paths`

get_overrides (*view, method*)

Get overrides specified for a given operation.

Parameters

- **view** – the view associated with the operation
- **method** (*str*) – HTTP method

Returns a dictionary containing any overrides set by `@swagger_auto_schema`

Return type dict

get_path_parameters (*path, view_cls*)

Return a list of Parameter instances corresponding to any templated path variables.

Parameters

- **path** (*str*) – templated request path
- **view_cls** (*type*) – the view class associated with the path

Returns path parameters

Return type list[`openapi.Parameter`]

9.1.5 drf_yasg.inspectors

`drf_yasg.inspectors.force_serializer_instance` (*serializer*)

Force *serializer* into a `Serializer` instance. If it is not a `Serializer` class or instance, raises an assertion error.

Parameters **serializer** – serializer class or instance

Returns serializer instance

class `drf_yasg.inspectors.SwaggerAutoSchema` (*view, path, method, overrides, components*)

Bases: object

Inspector class responsible for providing `Operation` definitions given a

Parameters

- **view** – the view associated with this endpoint
- **path** (*str*) – the path component of the operation URL
- **method** (*str*) – the http method of the operation
- **overrides** (*dict*) – manual overrides as passed to `@swagger_auto_schema`

- **components** (`openapi.ReferenceResolver`) – referenceable components

body_methods = ('PUT', 'PATCH', 'POST')
methods allowed to have a request body

get_operation (*operation_keys*)

Get an *Operation* for the given API endpoint (path, method). This includes query, body parameters and response schemas.

Parameters **operation_keys** (*tuple[str]*) – an array of keys describing the hierarchical layout of this view in the API; e.g. ('snippets', 'list'), ('snippets', 'retrieve'), etc.

Return type *openapi.Operation*

get_request_body_parameters (*consumes*)

Return the request body parameters for this view. This is either:

- a list with a single object *Parameter* with a *Schema* derived from the request serializer
- a list of primitive *Parameters* parsed as form data

Parameters **consumes** (*list[str]*) – a list of accepted MIME types as returned by *get_consumes()*

Returns a (potentially empty) list of *Parameters* either in: `body` or in: `formData`

Return type `list[openapi.Parameter]`

get_view_serializer ()

Return the serializer as defined by the view's `get_serializer()` method.

Returns the view's *Serializer*

get_request_serializer ()

Return the request serializer (used for parsing the request payload) for this endpoint.

Returns the request serializer, or one of *Schema*, *SchemaRef*, *None*

get_request_form_parameters (*serializer*)

Given a *Serializer*, return a list of in: `formData` *Parameters*.

Parameters **serializer** – the view's request serializer as returned by *get_request_serializer()*

Return type `list[openapi.Parameter]`

get_request_body_schema (*serializer*)

Return the *Schema* for a given request's body data. Only applies to PUT, PATCH and POST requests.

Parameters **serializer** – the view's request serializer as returned by *get_request_serializer()*

Return type *openapi.Schema*

make_body_parameter (*schema*)

Given a *Schema* object, create an in: `body` *Parameter*.

Parameters **schema** (*openapi.Schema*) – the request body schema

Return type *openapi.Parameter*

add_manual_parameters (*parameters*)

Add/replace parameters from the given list of automatically generated request parameters.

Parameters `parameters` (*list* [*openapi.Parameter*]) – generated parameters

Returns modified parameters

Return type *list*[*openapi.Parameter*]

get_responses ()

Get the possible responses for this view as a swagger *Responses* object.

Returns the documented responses

Return type *openapi.Responses*

get_paged_response_schema (*response_schema*)

Add appropriate paging fields to a response *Schema*.

Parameters `response_schema` (*openapi.Schema*) – the response schema that must be paged.

Return type *openapi.Schema*

get_default_responses ()

Get the default responses determined for this view from the request serializer and request method.

Type *dict*[*str*, *openapi.Schema*]

get_response_serializers ()

Return the response codes that this view is expected to return, and the serializer for each response body. The return value should be a dict where the keys are possible status codes, and values are either strings, *Serializers*, *Schema*, *SchemaRef* or *Response* objects. See *@swagger_auto_schema* for more details.

Returns the response serializers

Return type *dict*

get_response_schemas (*response_serializers*)

Return the *openapi.Response* objects calculated for this view.

Parameters `response_serializers` (*dict*) – response serializers as returned by *get_response_serializers* ()

Returns a dictionary of status code to *Response* object

Return type *dict*[*str*, *openapi.Response*]

get_query_serializer ()

Return the query serializer (used for parsing query parameters) for this endpoint.

Returns the query serializer, or *None*

get_query_parameters ()

Return the query parameters accepted by this view.

Return type *list*[*openapi.Parameter*]

should_filter ()

Determine whether filter backend parameters should be included for this request.

Return type *bool*

get_filter_backend_parameters (*filter_backend*)

Get the filter parameters for a single filter backend *instance*.

Parameters `filter_backend` (*BaseFilterBackend*) – the filter backend

Return type *list*[*openapi.Parameter*]

get_filter_parameters ()

Return the parameters added to the view by its filter backends.

Return type list[*openapi.Parameter*]

should_page ()

Determine whether paging parameters and structure should be added to this operation's request and response.

Return type bool

get_paginator_parameters (*paginator*)

Get the pagination parameters for a single paginator **instance**.

Parameters **paginator** (*BasePagination*) – the paginator

Return type list[*openapi.Parameter*]

get_pagination_parameters ()

Return the parameters added to the view by its paginator.

Return type list[*openapi.Parameter*]

get_description ()

Return an operation description determined as appropriate from the view's method and class docstrings.

Returns the operation description

Return type str

get_consumes ()

Return the MIME types this endpoint can consume.

Return type list[str]

serializer_to_schema (*serializer*)

Convert a DRF Serializer instance to an *openapi.Schema*.

Parameters **serializer** (*serializers.BaseSerializer*) – the Serializer instance

Return type *openapi.Schema*

serializer_to_parameters (*serializer, in_*)

Convert a DRF serializer into a list of *Parameters* using *field_to_parameter()*

Parameters

- **serializer** (*serializers.BaseSerializer*) – the Serializer instance
- **in** (*str*) – the location of the parameters, one of the *openapi.IN_** constants

Return type list[*openapi.Parameter*]

field_to_parameter (*field, name, in_*)

Convert a DRF serializer Field to a swagger *Parameter* object.

Parameters

- **field** (*coreapi.Field*) –
- **name** (*str*) – the name of the parameter
- **in** (*str*) – the location of the parameter, one of the *openapi.IN_** constants

Return type *openapi.Parameter*

coreapi_field_to_parameter (*field*)

Convert an instance of *coreapi.Field* to a swagger *Parameter* object.

Parameters *field* (*coreapi.Field*) –

Return type *openapi.Parameter*

9.1.6 drf_yasg.middleware

class `drf_yasg.middleware.SwaggerExceptionMiddleware` (*get_response*)

Bases: `object`

process_exception (*request, exception*)

9.1.7 drf_yasg.openapi

```

drf_yasg.openapi.TYPE_OBJECT = 'object'
drf_yasg.openapi.TYPE_STRING = 'string'
drf_yasg.openapi.TYPE_NUMBER = 'number'
drf_yasg.openapi.TYPE_INTEGER = 'integer'
drf_yasg.openapi.TYPE_BOOLEAN = 'boolean'
drf_yasg.openapi.TYPE_ARRAY = 'array'
drf_yasg.openapi.TYPE_FILE = 'file'
drf_yasg.openapi.FORMAT_DATE = 'date'
drf_yasg.openapi.FORMAT_DATETIME = 'date-time'
drf_yasg.openapi.FORMAT_PASSWORD = 'password'
drf_yasg.openapi.FORMAT_BINARY = 'binary'
drf_yasg.openapi.FORMAT_BASE64 = 'bytes'
drf_yasg.openapi.FORMAT_FLOAT = 'float'
drf_yasg.openapi.FORMAT_DOUBLE = 'double'
drf_yasg.openapi.FORMAT_INT32 = 'int32'
drf_yasg.openapi.FORMAT_INT64 = 'int64'
drf_yasg.openapi.FORMAT_EMAIL = 'email'
drf_yasg.openapi.FORMAT_IPV4 = 'ipv4'
drf_yasg.openapi.FORMAT_IPV6 = 'ipv6'
drf_yasg.openapi.FORMAT_URI = 'uri'
drf_yasg.openapi.FORMAT_UUID = 'uuid'
drf_yasg.openapi.FORMAT_SLUG = 'slug'
drf_yasg.openapi.IN_BODY = 'body'
drf_yasg.openapi.IN_PATH = 'path'
drf_yasg.openapi.IN_QUERY = 'query'

```

```
drf_yasg.openapi.IN_FORM = 'formData'
```

```
drf_yasg.openapi.IN_HEADER = 'header'
```

```
drf_yasg.openapi.SCHEMA_DEFINITIONS = 'definitions'
```

```
drf_yasg.openapi.make_swagger_name(attribute_name)
```

Convert a python variable name into a Swagger spec attribute name.

In particular,

- if name starts with `x_`, return `x-{camelCase}`
- if name is `ref`, return `$ref`
- else return the name converted to `camelCase`, with trailing underscores stripped

Parameters `attribute_name` (*str*) – python attribute name

Returns swagger name

```
class drf_yasg.openapi.SwaggerDict(**attrs)
```

Bases: `collections.OrderedDict`

A particular type of `OrderedDict`, which maps all attribute accesses to dict lookups using `make_swagger_name()`. Attribute names starting with `_` are set on the object as-is and are not included in the specification output.

Used as a base class for all Swagger helper models.

```
__insert_extras__()
```

From an ordering perspective, it is desired that extra attributes such as vendor extensions stay at the bottom of the object. However, python2.7's `OrderedDict` craps out if you try to insert into it before calling `init`. This means that subclasses must call `super().__init__` as the first statement of their own `__init__`, which would result in the extra attributes being added first. For this reason, we defer the insertion of the attributes and require that subclasses call `._insert_extras__` at the end of their `__init__` method.

```
static _as_odict(obj, memo)
```

Implementation detail of `as_odict()`

```
as_odict()
```

Convert this object into an `OrderedDict` instance.

Return type `OrderedDict`

```
class drf_yasg.openapi.Contact(name=None, url=None, email=None, **extra)
```

Bases: `drf_yasg.openapi.SwaggerDict`

Swagger Contact object

At least one of the following fields is required:

Parameters

- **name** (*str*) – contact name
- **url** (*str*) – contact url
- **email** (*str*) – contact e-mail

```
class drf_yasg.openapi.License(name, url=None, **extra)
```

Bases: `drf_yasg.openapi.SwaggerDict`

Swagger License object

Parameters

- **name** (*str*) – Required. License name

- **url** (*str*) – link to detailed license information

class drf_yasg.openapi.**Info** (*title, default_version, description=None, terms_of_service=None, contact=None, license=None, **extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Swagger Info object

Parameters

- **title** (*str*) – Required. API title.
- **default_version** (*str*) – Required. API version string (not to be confused with Swagger spec version)
- **description** (*str*) – API description; markdown supported
- **terms_of_service** (*str*) – API terms of service; should be a URL
- **contact** (*Contact*) – contact object
- **license** (*License*) – license object

class drf_yasg.openapi.**Swagger** (*info=None, _url=None, _version=None, paths=None, definitions=None, **extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Root Swagger object.

Parameters

- **info** (*Info*) – info object
- **_url** (*str*) – URL used for guessing the API host, scheme and basepath
- **_version** (*str*) – version string to override Info
- **paths** (*Paths*) – paths object
- **definitions** (*dict[str, Schema]*) – named models

class drf_yasg.openapi.**Paths** (*paths, **extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

A listing of all the paths in the API.

Parameters **paths** (*dict[str, PathItem]*) –

class drf_yasg.openapi.**PathItem** (*get=None, put=None, post=None, delete=None, options=None, head=None, patch=None, parameters=None, **extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Information about a single path

Parameters

- **get** (*Operation*) – operation for GET
- **put** (*Operation*) – operation for PUT
- **post** (*Operation*) – operation for POST
- **delete** (*Operation*) – operation for DELETE
- **options** (*Operation*) – operation for OPTIONS
- **head** (*Operation*) – operation for HEAD
- **patch** (*Operation*) – operation for PATCH
- **parameters** (*list[Parameter]*) – parameters that apply to all operations

class drf_yasg.openapi.**Operation** (*operation_id*, *responses*, *parameters=None*, *consumes=None*,
produces=None, *description=None*, *tags=None*, ****extra**)

Bases: *drf_yasg.openapi.SwaggerDict*

Information about an API operation (path + http method combination)

Parameters

- **operation_id** (*str*) – operation ID, should be unique across all operations
- **responses** (*Responses*) – responses returned
- **parameters** (*list [Parameter]*) – parameters accepted
- **consumes** (*list [str]*) – content types accepted
- **produces** (*list [str]*) – content types produced
- **description** (*str*) – operation description
- **tags** (*list [str]*) – operation tags

class drf_yasg.openapi.**Items** (*type=None*, *format=None*, *enum=None*, *pattern=None*,
items=None, ****extra**)

Bases: *drf_yasg.openapi.SwaggerDict*

Used when defining an array *Parameter* to describe the array elements.

Parameters

- **type** (*str*) – type of the array elements; must not be `object`
- **format** (*str*) – value format, see OpenAPI spec
- **enum** (*list*) – restrict possible values
- **pattern** (*str*) – pattern if type is `string`
- **items** (*Items*) – only valid if *type* is `array`

class drf_yasg.openapi.**Parameter** (*name*, *in_*, *description=None*, *required=None*,
schema=None, *type=None*, *format=None*, *enum=None*,
pattern=None, *items=None*, ****extra**)

Bases: *drf_yasg.openapi.SwaggerDict*

Describe parameters accepted by an *Operation*. Each parameter should be a unique combination of (*name*, *in_*). `body` and `form` parameters in the same operation are mutually exclusive.

Parameters

- **name** (*str*) – parameter name
- **in** (*str*) – parameter location
- **description** (*str*) – parameter description
- **required** (*bool*) – whether the parameter is required for the operation
- **schema** (*Schema, SchemaRef*) – required if *in_* is `body`
- **type** (*str*) – parameter type; required if *in_* is not `body`; must not be `object`
- **format** (*str*) – value format, see OpenAPI spec
- **enum** (*list*) – restrict possible values
- **pattern** (*str*) – pattern if type is `string`
- **items** (*Items*) – only valid if *type* is `array`

class `drf_yasg.openapi.Schema` (*description=None, required=None, type=None, properties=None, additional_properties=None, format=None, enum=None, pattern=None, items=None, **extra*)

Bases: `drf_yasg.openapi.SwaggerDict`

Describes a complex object accepted as parameter or returned as a response.

Parameters

- **description** – schema description
- **required** (*list[str]*) – list of required property names
- **type** (*str*) – value type; required
- **properties** (*list[Schema, SchemaRef]*) – object properties; required if *type* is object
- **additional_properties** (*bool, Schema, SchemaRef*) – allow wildcard properties not listed in *properties*
- **format** (*str*) – value format, see OpenAPI spec
- **enum** (*list*) – restrict possible values
- **pattern** (*str*) – pattern if type is `string`
- **items** (*Schema, SchemaRef*) – only valid if *type* is array

OR_REF = (<class 'drf_yasg.openapi.Schema'>, <class 'drf_yasg.openapi.SchemaRef'>)

class `drf_yasg.openapi._Ref` (*resolver, name, scope, expected_type*)

Bases: `drf_yasg.openapi.SwaggerDict`

Base class for all reference types. A reference object has only one property, `$ref`, which must be a JSON reference to a valid object in the specification, e.g. `#/definitions/Article` to refer to an article model.

Parameters

- **resolver** (`ReferenceResolver`) – component resolver which must contain the referenced object
- **name** (*str*) – referenced object name, e.g. “Article”
- **scope** (*str*) – reference scope, e.g. “definitions”
- **expected_type** (*type[SwaggerDict]*) – the expected type that will be asserted on the object found in resolver

class `drf_yasg.openapi.SchemaRef` (*resolver, schema_name*)

Bases: `drf_yasg.openapi._Ref`

Adds a reference to a named Schema defined in the `#/definitions/` object.

Parameters

- **resolver** (`ReferenceResolver`) – component resolver which must contain the definition
- **schema_name** (*str*) – schema name

class `drf_yasg.openapi.Responses` (*responses, default=None, **extra*)

Bases: `drf_yasg.openapi.SwaggerDict`

Describes the expected responses of an `Operation`.

Parameters

- **responses** (*dict[(str, int), Response]*) – mapping of status code to response definition

- **default** (*Response*) – description of the response structure to expect if another status code is returned

class `drf_yasg.openapi.Response` (*description, schema=None, examples=None, **extra*)

Bases: `drf_yasg.openapi.SwaggerDict`

Describes the structure of an operation’s response.

Parameters

- **description** (*str*) – response description
- **schema** (*Schema, SchemaRef*) – sturcture of the response body
- **examples** (*dict*) – example bodies mapped by mime type

class `drf_yasg.openapi.ReferenceResolver` (**scopes*)

Bases: `object`

A mapping type intended for storing objects pointed at by Swagger Refs. Provides support and checks for different reference scopes, e.g. ‘definitions’.

For example:

```
> components = ReferenceResolver('definitions', 'parameters')
> definitions = ReferenceResolver.with_scope('definitions')
> definitions.set('Article', Schema(...))
> print(components)
{'definitions': OrderedDict([('Article', Schema(...)]), 'parameters':
↳OrderedDict() }
```

Parameters **scopes** (*str*) – an enumeration of the valid scopes this resolver will contain

with_scope (*scope*)

Return a new `ReferenceResolver` whose scope is defaulted and forced to *scope*.

Parameters **scope** (*str*) – target scope, must be in this resolver’s *scopes*

Returns the bound resolver

Return type `ReferenceResolver`

_check_scope (*scope*)

set (*name, obj, scope=None*)

Set an object in the given scope, raise an error if it already exists.

Parameters

- **name** (*str*) – reference name
- **obj** – referenced object
- **scope** (*str*) – reference scope

setdefault (*name, maker, scope=None*)

Set an object in the given scope only if it does not exist.

Parameters

- **name** (*str*) – reference name
- **maker** (*callable*) – object factory, called only if necessary
- **scope** (*str*) – reference scope

get (*name, scope=None*)

Get an object from the given scope, raise an error if it does not exist.

Parameters

- **name** (*str*) – reference name
- **scope** (*str*) – reference scope

Returns the object**getdefault** (*name*, *default=None*, *scope=None*)

Get an object from the given scope or a default value if it does not exist.

Parameters

- **name** (*str*) – reference name
- **default** – the default value
- **scope** (*str*) – reference scope

Returns the object or *default***has** (*name*, *scope=None*)

Check if an object exists in the given scope.

Parameters

- **name** (*str*) – reference name
- **scope** (*str*) – reference scope

Returns True if the object exists**Return type** bool**scopes****keys** ()

9.1.8 drf_yasg.renderers

class drf_yasg.renderers._SpecRenderer

Bases: rest_framework.renderers.BaseRenderer

Base class for text renderers. Handles encoding and validation.

charset = None**validators** = ['ssv', 'flex']**codec_class** = None**classmethod with_validators** (*validators*)**render** (*data*, *media_type=None*, *renderer_context=None*)**class** drf_yasg.renderers.OpenAPIRenderer

Bases: drf_yasg.renderers._SpecRenderer

Renders the schema as a JSON document with the application/openapi+json specific mime type.

media_type = 'application/openapi+json'**format** = 'openapi'**codec_class**

alias of OpenAPICodecJson

```
class drf_yasg.renderers.SwaggerJSONRenderer
```

```
    Bases: drf_yasg.renderers._SpecRenderer
```

```
    Renders the schema as a JSON document with the generic application/json mime type.
```

```
    media_type = 'application/json'
```

```
    format = '.json'
```

```
    codec_class
```

```
        alias of OpenAPICodecJson
```

```
class drf_yasg.renderers.SwaggerYAMLRenderer
```

```
    Bases: drf_yasg.renderers._SpecRenderer
```

```
    Renders the schema as a YAML document.
```

```
    media_type = 'application/yaml'
```

```
    format = '.yaml'
```

```
    codec_class
```

```
        alias of OpenAPICodecYaml
```

```
class drf_yasg.renderers._UIRenderer
```

```
    Bases: rest_framework.renderers.BaseRenderer
```

```
    Base class for web UI renderers. Handles loading and passing settings to the appropriate template.
```

```
    media_type = 'text/html'
```

```
    charset = 'utf-8'
```

```
    template = ''
```

```
    render (swagger, accepted_media_type=None, renderer_context=None)
```

```
    set_context (renderer_context, swagger)
```

```
    get_auth_urls ()
```

```
    get_swagger_ui_settings ()
```

```
    get_redoc_settings ()
```

```
class drf_yasg.renderers.SwaggerUIRenderer
```

```
    Bases: drf_yasg.renderers._UIRenderer
```

```
    Renders a swagger-ui web interface for schema browsing. Also requires OpenAPIRenderer as an available renderer on the same view.
```

```
    template = 'drf-yasg/swagger-ui.html'
```

```
    format = 'swagger'
```

```
class drf_yasg.renderers.ReDocRenderer
```

```
    Bases: drf_yasg.renderers._UIRenderer
```

```
    Renders a ReDoc web interface for schema browsing. Also requires OpenAPIRenderer as an available renderer on the same view.
```

```
    template = 'drf-yasg/redoc.html'
```

```
    format = 'redoc'
```

9.1.9 drf_yasg.utils

`drf_yasg.utils.no_body = <object object>`
used to forcibly remove the body of a request via `swagger_auto_schema()`

`drf_yasg.utils.is_list_view(path, method, view)`
Check if the given path/method appears to represent a list view (as opposed to a detail/instance view).

Parameters

- **path** (*str*) – view path
- **method** (*str*) – http method
- **view** (*APIView*) – target view

Return type bool

`drf_yasg.utils.swagger_auto_schema(method=None, methods=None, auto_schema=None, request_body=None, query_serializer=None, manual_parameters=None, operation_description=None, responses=None)`

Decorate a view method to customize the `Operation` object generated from it.

`method` and `methods` are mutually exclusive and must only be present when decorating a view method that accepts more than one HTTP request method.

The `auto_schema` and `operation_description` arguments take precedence over view- or method-level values.

Parameters

- **method** (*str*) – for multi-method views, the http method the options should apply to
- **methods** (*list[str]*) – for multi-method views, the http methods the options should apply to
- **auto_schema** (*SwaggerAutoSchema*) – custom class to use for generating the `Operation` object
- **request_body** (*Schema, SchemaRef, Serializer*) – custom request body, or `no_body`. The value given here will be used as the `schema` property of a `Parameter` with `in: 'body'`.

A `Schema` or `SchemaRef` is not valid if this request consumes form-data, because `form` and `body` parameters are mutually exclusive in an `Operation`. If you need to set custom `form` parameters, you can use the `manual_parameters` argument.

If a `Serializer` class or instance is given, it will be automatically converted into a `Schema` used as a `body Parameter`, or into a list of `form Parameters`, as appropriate.

- **query_serializer** (*Serializer*) – if you use a `Serializer` to parse query parameters, you can pass it here and have `Parameter` objects be generated automatically from it.

If any `Field` on the serializer cannot be represented as a `query Parameter` (e.g. nested Serializers, file fields, ...), the schema generation will fail with an error.

Schema generation will also fail if the name of any `Field` on the `query_serializer` conflicts with parameters generated by `filter_backends` or `paginator`.

- **manual_parameters** (*list[Parameter]*) – a list of manual parameters to override the automatically generated ones

`Parameters` are identified by their (name, in) combination, and any parameters given here will fully override automatically generated parameters if they collide.

It is an error to supply `form` parameters when the request does not consume form-data.

- **operation_description** (*str*) – operation description override
- **responses** (*dict[str, (Schema, SchemaRef, Response, str, Serializer)]*) – a dict of documented manual responses keyed on response status code. If no success (2xx) response is given, one will automatically be generated from the request body and http method. If any 2xx response is given the automatic response is suppressed.
 - if a plain string is given as value, a *Response* with no body and that string as its description will be generated
 - if a *Schema*, *SchemaRef* is given, a *Response* with the schema as its body and an empty description will be generated
 - a *Serializer* class or instance will be converted into a *Schema* and treated as above
 - a *Response* object will be used as-is; however if its `schema` attribute is a *Serializer*, it will automatically be converted into a *Schema*

`drf_yasg.utils.get_model_field(queryset, field_name)`

Try to get information about a model and model field from a queryset.

Parameters

- **queryset** – the queryset
- **field_name** – the target field name

Returns the model and target field from the queryset as a 2-tuple; both elements can be `None`

Return type tuple

`drf_yasg.utils.inspect_model_field(model, model_field)`

Extract information from a django model field instance.

Parameters

- **model** – the django model
- **model_field** – a field on the model

Returns description, type, format and pattern extracted from the model field

Return type `OrderedDict`

`drf_yasg.utils.serializer_field_to_swagger(field, swagger_object_type, definitions=None, **kwargs)`

Convert a drf Serializer or Field instance into a Swagger object.

Parameters

- **field** (*rest_framework.serializers.Field*) – the source field
- **swagger_object_type** (*type[openapi.SwaggerDict]*) – should be one of `Schema`, `Parameter`, `Items`
- **definitions** (*ReferenceResolver*) – used to serialize Schemas by reference
- **kwargs** – extra attributes for constructing the object; if `swagger_object_type` is `Parameter`, `name` and `in_` should be provided

Returns the swagger object

Return type *openapi.Parameter*, *openapi.Items*, *openapi.Schema*

`drf_yasg.utils.find_regex(regex_field)`

Given a `Field`, look for a `RegexValidator` and try to extract its pattern and return it as a string.

Parameters `regex_field` (`serializers.Field`) – the field instance

Returns the extracted pattern, or `None`

Return type `str`

`drf_yasg.utils.param_list_to_odict(parameters)`

Transform a list of `Parameter` objects into an `OrderedDict` keyed on the `(name, in_)` tuple of each parameter.

Raises an `AssertionError` if `parameters` contains duplicate parameters (by their name + in combination).

Parameters `parameters` (`list [Parameter]`) – the list of parameters

Returns `parameters` keyed by `(name, in_)`

Return type `dict[tuple(str,str),Parameter]`

9.1.10 drf_yasg.views

`drf_yasg.views.deferred_never_cache(view_func)`

Decorator that adds headers to a response so that it will never be cached.

`drf_yasg.views.get_schema_view(info, url=None, patterns=None, urlconf=None, public=False, validators=None, generator_class=<class 'drf_yasg.generators.OpenAPISchemaGenerator'>, authentication_classes=[<class 'rest_framework.authentication.SessionAuthentication'>, <class 'rest_framework.authentication.BasicAuthentication'>], permission_classes=[<class 'rest_framework.permissions.AllowAny'>])`

Create a `SchemaView` class with default renderers and generators.

Parameters

- **info** (`Info`) – Required. Swagger API Info object
- **url** (`str`) – API base url; if left blank will be deduced from the location the view is served at
- **patterns** – passed to `SchemaGenerator`
- **urlconf** – passed to `SchemaGenerator`
- **public** (`bool`) – if `False`, includes only endpoints the current user has access to
- **validators** (`list`) – a list of validator names to apply; allowed values are `flex`, `ssv`
- **generator_class** (`type`) – schema generator class to use; should be a subclass of `OpenAPISchemaGenerator`
- **authentication_classes** (`tuple`) – authentication classes for the schema view itself
- **permission_classes** (`tuple`) – permission classes for the schema view itself

Returns `SchemaView` class

Return type `type[SchemaView]`

`class drf_yasg.views.SchemaView(**kwargs)`

Bases: `rest_framework.views.APIView`

Constructor. Called in the URLconf; can contain helpful extra keyword arguments, and other things.

`_ignore_model_permissions = True`

classmethod `as_cached_view` (*cache_timeout=0, cache_kwargs=None, **initkwargs*)

Calls `.as_view()` and wraps the result in a `cache_page` decorator. See <https://docs.djangoproject.com/en/1.11/topics/cache/>

Parameters

- **cache_timeout** (*int*) – same as `cache_page`; set to 0 for no cache
- **cache_kwargs** (*dict*) – dictionary of kwargs to be passed to `cache_page`
- **initkwargs** – kwargs for `.as_view()`

Returns a view instance

`authentication_classes = [<class 'rest_framework.authentication.SessionAuthentication'>]`

generator_class

alias of `OpenAPISchemaGenerator`

get (*request, version="", format=None*)

`permission_classes = [<class 'rest_framework.permissions.AllowAny'>]`

`public = False`

`renderer_classes = (<class 'drf_yasg.renderers.SwaggerYAMLRenderer'>, <class 'drf_yasg.renderers.JSONRenderer'>)`

`schema = None`

classmethod `with_ui` (*renderer='swagger', cache_timeout=0, cache_kwargs=None*)

Instantiate this view with a Web UI renderer, optionally wrapped with `cache_page`. See <https://docs.djangoproject.com/en/1.11/topics/cache/>.

Parameters

- **renderer** (*str*) – UI renderer; allowed values are `swagger`, `redoc`
- **cache_timeout** (*int*) – same as `cache_page`; set to 0 for no cache
- **cache_kwargs** (*dict*) – dictionary of kwargs to be passed to `cache_page`

Returns a view instance

classmethod `without_ui` (*cache_timeout=0, cache_kwargs=None*)

Instantiate this view with just JSON and YAML renderers, optionally wrapped with `cache_page`. See <https://docs.djangoproject.com/en/1.11/topics/cache/>.

Parameters

- **cache_timeout** (*int*) – same as `cache_page`; set to 0 for no cache
- **cache_kwargs** (*dict*) – dictionary of kwargs to be passed to `cache_page`

Returns a view instance

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