marshmallow-jsonapi

Release 0.24.0

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Release v0.24.0. (*Changelog*)

JSON API 1.0 (https://jsonapi.org) formatting with marshmallow.

marshmallow-jsonapi provides a simple way to produce JSON API-compliant data in any Python web framework.

```python
from marshmallow_jsonapi import Schema, fields


class PostSchema(Schema):
    id = fields.Str(dump_only=True)
    title = fields.Str()

    author = fields.Relationship(
        related_url="/authors/{author_id}",
        related_url_kwargs={"author_id": "<author.id>"},
    )

    comments = fields.Relationship(
        related_url="/posts/{post_id}/comments",
        related_url_kwargs={"post_id": "<id>"},
        # Include resource linkage
        many=True,
        include_resource_linkage=True,
        type_="comments",
    )

    class Meta:
        type_ = "posts"
        strict = True


post_schema = PostSchema()
post_schema.dump(post)
# {
#     "data": {
#         "id": "1",
#         "type": "posts"
#         "attributes": {
#             "title": "JSON API paints my bikeshed!"
#         },
#         "relationships": {
#             "author": {
#                 "links": {
#                     "related": "/authors/9"
#                 }
#             },
#             "comments": {
#                 "data": [
#                     {"id": 5, "type": "comments"},
#                     {"id": 12, "type": "comments"}
#                 ],
#                 "links": {
#                     "related": "/posts/1/comments/"
#                 }
#             }
#         }
#     }
# }
```

INSTALLATION

```
pip install marshmallow-jsonapi
```

GUIDE

2.1 Quickstart

Note: The following guide assumes some familiarity with the marshmallow API. To learn more about marshmallow, see its official documentation at https://marshmallow.readthedocs.io.

2.1.1 Declaring schemas

Let's start with a basic post "model".

```python
class Post:
    def __init__(self, id, title):
        self.id = id
        self.title = title
```

Declare your schemas as you would with marshmallow.

A *Schema* **MUST** define:

- An `id` field
- The `type_` class Meta option

It is **RECOMMENDED** to set strict mode to `True`.

Automatic self-linking is supported through these Meta options:

- `self_url` specifies the URL to the resource itself
- `self_url_kwargs` specifies replacement fields for `self_url`
- `self_url_many` specifies the URL the resource when a collection (many) are serialized

```python
from marshmallow_jsonapi import Schema, fields


class PostSchema(Schema):
    id = fields.Str(dump_only=True)
    title = fields.Str()

    class Meta:
        type_ = "posts"
        self_url = "/posts/{id}"
```

```
        self_url_kwargs = {"id": "<id>"}
        self_url_many = "/posts/"
```

These URLs can be auto-generated by specifying `self_view`, `self_view_kwargs` and `self_view_many` instead when using the *Flask integration*.

2.1.2 Serialization

Objects will be serialized to JSON API documents with primary data.

```
post = Post(id="1", title="Django is Omakase")
PostSchema().dump(post)
# {
#     'data': {
#         'id': '1',
#         'type': 'posts',
#         'attributes': {'title': 'Django is Omakase'},
#         'links': {'self': '/posts/1'}
#     },
#     'links': {'self': '/posts/1'}
# }
```

2.1.3 Relationships

The `Relationship` field is used to serialize relationship objects. For example, a Post may have an author and comments associated with it.

```python
class User:
    def __init__(self, id, name):
        self.id = id
        self.name = name


class Comment:
    def __init__(self, id, body, author):
        self.id = id
        self.body = body
        self.author = author


class Post:
    def __init__(self, id, title, author, comments=None):
        self.id = id
        self.title = title
        self.author = author  # User object
        self.comments = [] if comments is None else comments  # Comment objects
```

To serialize links, pass a URL format string and a dictionary of keyword arguments. String arguments enclosed in < > will be interpreted as attributes to pull from the object being serialized. The relationship links can automatically be generated from Flask view names when using the *Flask integration*.

```python
class PostSchema(Schema):
    id = fields.Str(dump_only=True)
```

```python
    title = fields.Str()

    author = fields.Relationship(
        self_url="/posts/{post_id}/relationships/author",
        self_url_kwargs={"post_id": "<id>"},
        related_url="/authors/{author_id}",
        related_url_kwargs={"author_id": "<author.id>"},
    )

    class Meta:
        type_ = "posts"


user = User(id="94", name="Laura")
post = Post(id="1", title="Django is Omakase", author=user)
PostSchema().dump(post)
# {
#     'data': {
#         'id': '1',
#         'type': 'posts',
#         'attributes': {'title': 'Django is Omakase'},
#         'relationships': {
#             'author': {
#                 'links': {
#                     'self': '/posts/1/relationships/author',
#                     'related': '/authors/94'
#                 }
#             }
#         }
#     }
# }
```

Resource linkages

You can serialize resource linkages by passing `include_resource_linkage=True` and the resource `type_` argument.

```python
class PostSchema(Schema):
    id = fields.Str(dump_only=True)
    title = fields.Str()

    author = fields.Relationship(
        self_url="/posts/{post_id}/relationships/author",
        self_url_kwargs={"post_id": "<id>"},
        related_url="/authors/{author_id}",
        related_url_kwargs={"author_id": "<author.id>"},
        # Include resource linkage
        include_resource_linkage=True,
        type_="users",
    )

    class Meta:
        type_ = "posts"
```

```
PostSchema().dump(post)
# {
#     'data': {
#         'id': '1',
#         'type': 'posts',
#         'attributes': {'title': 'Django is Omakase'},
#         'relationships': {
#             'author': {
#                 'data': {'type': 'users', 'id': '94'},
#                 'links': {
#                     'self': '/posts/1/relationships/author',
#                     'related': '/authors/94'
#                 }
#             }
#         }
#     }
# }
```

Compound documents

Compound documents allow to include related resources into the request with the primary resource. In order to include objects, you have to define a *Schema* for the respective relationship, which will be used to render those objects.

```python
class PostSchema(Schema):
    id = fields.Str(dump_only=True)
    title = fields.Str()

    comments = fields.Relationship(
        related_url="/posts/{post_id}/comments",
        related_url_kwargs={"post_id": "<id>"},
        many=True,
        include_resource_linkage=True,
        type_="comments",
        # define a schema for rendering included data
        schema="CommentSchema",
    )

    author = fields.Relationship(
        self_url="/posts/{post_id}/relationships/author",
        self_url_kwargs={"post_id": "<id>"},
        related_url="/authors/{author_id}",
        related_url_kwargs={"author_id": "<author.id>"},
        include_resource_linkage=True,
        type_="users",
    )

    class Meta:
        type_ = "posts"


class CommentSchema(Schema):
    id = fields.Str(dump_only=True)
    body = fields.Str()

    author = fields.Relationship(
```

```python
        self_url="/comments/{comment_id}/relationships/author",
        self_url_kwargs={"comment_id": "<id>"},
        related_url="/comments/{author_id}",
        related_url_kwargs={"author_id": "<author.id>"},
        type_="users",
        # define a schema for rendering included data
        schema="UserSchema",
    )

    class Meta:
        type_ = "comments"


class UserSchema(Schema):
    id = fields.Str(dump_only=True)
    name = fields.Str()

    class Meta:
        type_ = "users"
```

Just as with nested fields the `schema` can be a class or a string with a simple or fully qualified class name. Make sure to import the schema beforehand.

Now you can include some data in a dump by specifying the `include_data` argument (also supports nested relations via the dot syntax).

```python
armin = User(id="101", name="Armin")
laura = User(id="94", name="Laura")
steven = User(id="23", name="Steven")
comments = [
    Comment(id="5", body="Marshmallow is sweet like sugar!", author=steven),
    Comment(id="12", body="Flask is Fun!", author=armin),
]
post = Post(id="1", title="Django is Omakase", author=laura, comments=comments)

PostSchema(include_data=("comments", "comments.author")).dump(post)
# {
#     'data': {
#         'id': '1',
#         'type': 'posts',
#         'attributes': {'title': 'Django is Omakase'},
#         'relationships': {
#             'author': {
#                 'data': {'type': 'users', 'id': '94'},
#                 'links': {
#                     'self': '/posts/1/relationships/author',
#                     'related': '/authors/94'
#                 }
#             },
#             'comments': {
#                 'data': [
#                     {'type': 'comments', 'id': '5'},
#                     {'type': 'comments', 'id': '12'}
#                 ],
#                 'links': {
#                     'related': '/posts/1/comments'
#                 }
```

```
#                    }
#                }
#        },
#        'included': [
#            {
#                'id': '5',
#                'type': 'comments',
#                'attributes': {'body': 'Marshmallow is sweet like sugar!'},
#                'relationships': {
#                    'author': {
#                        'data': {'type': 'users', 'id': '23'},
#                        'links': {
#                            'self': '/comments/5/relationships/author',
#                            'related': '/comments/23'
#                        }
#                    }
#                }
#            },
#            {
#                'id': '12',
#                'type': 'comments',
#                'attributes': {'body': 'Flask is Fun!'},
#                'relationships': {
#                    'author': {
#                        'data': {'type': 'users', 'id': '101'},
#                        'links': {
#                            'self': '/comments/12/relationships/author',
#                            'related': '/comments/101'
#                        }
#                    }
#                },
#
#            },
#            {
#                'id': '23',
#                'type': 'users',
#                'attributes': {'name': 'Steven'}
#            },
#            {
#                'id': '101',
#                'type': 'users',
#                'attributes': {'name': 'Armin'}
#            }
#        ]
# }
```

2.1.4 Meta Information

The *DocumentMeta* field is used to serialize the meta object within a document's "top level".

```python
from marshmallow_jsonapi import Schema, fields


class UserSchema(Schema):
    id = fields.Str(dump_only=True)
    name = fields.Str()
    document_meta = fields.DocumentMeta()

    class Meta:
        type_ = "users"


user = {"name": "Alice", "document_meta": {"page": {"offset": 10}}}
UserSchema().dump(user)
# {
#     "meta": {
#         "page": {
#             "offset": 10
#         }
#     },
#     "data": {
#         "id": "1",
#         "type": "users"
#         "attributes": {"name": "Alice"},
#     }
# }
```

The *ResourceMeta* field is used to serialize the meta object within a resource object.

```python
from marshmallow_jsonapi import Schema, fields


class UserSchema(Schema):
    id = fields.Str(dump_only=True)
    name = fields.Str()
    resource_meta = fields.ResourceMeta()

    class Meta:
        type_ = "users"


user = {"name": "Alice", "resource_meta": {"active": True}}
UserSchema().dump(user)
# {
#     "data": {
#         "type": "users",
#         "attributes": {"name": "Alice"},
#         "meta": {
#             "active": true
#         }
#     }
# }
```

2.1.5 Errors

`Schema.load()` and `Schema.validate()` will return JSON API-formatted Error objects.

```python
from marshmallow_jsonapi import Schema, fields
from marshmallow import validate, ValidationError


class AuthorSchema(Schema):
    id = fields.Str(dump_only=True)
    first_name = fields.Str(required=True)
    last_name = fields.Str(required=True)
    password = fields.Str(load_only=True, validate=validate.Length(6))
    twitter = fields.Str()

    class Meta:
        type_ = "authors"


author_data = {
    "data": {"type": "users", "attributes": {"first_name": "Dan", "password": "short"}
→}
}
AuthorSchema().validate(author_data)
# {
#     'errors': [
#         {
#             'detail': 'Missing data for required field.',
#             'source': {
#                 'pointer': '/data/attributes/last_name'
#             }
#         },
#         {
#             'detail': 'Shorter than minimum length 6.',
#             'source': {
#                 'pointer': '/data/attributes/password'
#             }
#         }
#     ]
# }
```

If an invalid "type" is passed in the input data, an `IncorrectTypeError` is raised.

```python
from marshmallow_jsonapi.exceptions import IncorrectTypeError

author_data = {
    "data": {
        "type": "invalid-type",
        "attributes": {
            "first_name": "Dan",
            "last_name": "Gebhardt",
            "password": "verysecure",
        },
    }
}

try:
    AuthorSchema().validate(author_data)
```

```python
except IncorrectTypeError as err:
    pprint(err.messages)
# {
#     'errors': [
#         {
#             'detail': 'Invalid type. Expected "users".',
#             'source': {
#                 'pointer': '/data/type'
#             }
#         }
#     ]
# }
```

2.1.6 Inflection

You can optionally specify a function to transform attribute names. For example, you may decide to follow JSON API's recommendation to use "dasherized" names.

```python
from marshmallow_jsonapi import Schema, fields


def dasherize(text):
    return text.replace("_", "-")


class UserSchema(Schema):
    id = fields.Str(dump_only=True)
    first_name = fields.Str(required=True)
    last_name = fields.Str(required=True)

    class Meta:
        type_ = "users"
        inflect = dasherize


UserSchema().dump(user)
# {
#     'data': {
#         'id': '9',
#         'type': 'users',
#         'attributes': {
#             'first-name': 'Dan',
#             'last-name': 'Gebhardt'
#         }
#     }
# }
```

2.1.7 Flask integration

marshmallow-jsonapi includes optional utilities to integrate with Flask.

A Flask-specific schema in `marshmallow_jsonapi.flask` can be used to auto-generate self-links based on view names instead of hard-coding URLs.

Additionally, the `Relationship` field in the `marshmallow_jsonapi.flask` module allows you to pass view names instead of path templates to generate relationship links.

```python
from marshmallow_jsonapi import fields
from marshmallow_jsonapi.flask import Relationship, Schema


class PostSchema(Schema):
    id = fields.Str(dump_only=True)
    title = fields.Str()

    author = fields.Relationship(
        self_view="post_author",
        self_url_kwargs={"post_id": "<id>"},
        related_view="author_detail",
        related_view_kwargs={"author_id": "<author.id>"},
    )

    comments = Relationship(
        related_view="post_comments",
        related_view_kwargs={"post_id": "<id>"},
        many=True,
        include_resource_linkage=True,
        type_="comments",
    )

    class Meta:
        type_ = "posts"
        self_view = "post_detail"
        self_view_kwargs = {"post_detail": "<id>"}
        self_view_many = "posts_list"
```

See here for a full example.

API REFERENCE

3.1 API Reference

3.1.1 Core

class marshmallow_jsonapi.**Schema**(**args*, ***kwargs*)

Schema class that formats data according to JSON API 1.0. Must define the type_ class Meta option.

Example:

```python
from marshmallow_jsonapi import Schema, fields

def dasherize(text):
    return text.replace('_', '-')

class PostSchema(Schema):
    id = fields.Str(dump_only=True)  # Required
    title = fields.Str()

    author = fields.HyperlinkRelated(
        '/authors/{author_id}',
        url_kwargs={'author_id': '<author.id>'},
    )

    comments = fields.HyperlinkRelated(
        '/posts/{post_id}/comments',
        url_kwargs={'post_id': '<id>'},
        # Include resource linkage
        many=True, include_resource_linkage=True,
        type_='comments'
    )

    class Meta:
        type_ = 'posts'  # Required
        inflect = dasherize
```

class Meta

Options object for *Schema*. Takes the same options as marshmallow.Schema.Meta with the addition of:

- type_ - required, the JSON API resource type as a string.

- inflect - optional, an inflection function to modify attribute names.

- self_url - optional, URL to use to self in links

- `self_url_kwargs` - optional, replacement fields for `self_url`. String arguments enclosed in < > will be interpreted as attributes to pull from the schema data.

- `self_url_many` - optional, URL to use to `self` in top-level `links` when a collection of resources is returned.

OPTIONS_CLASS
> alias of `marshmallow_jsonapi.schema.SchemaOpts`

check_relations(*relations*)
> Recursive function which checks if a relation is valid.

format_error(*field_name*, *message*, *index=None*)
> Override-able hook to format a single error message as an Error object.

> See: http://jsonapi.org/format/#error-objects

format_errors(*errors*, *many*)
> Format validation errors as JSON Error objects.

format_item(*item*)
> Format a single datum as a Resource object.

> See: http://jsonapi.org/format/#document-resource-objects

format_items(*data*, *many*)
> Format data as a Resource object or list of Resource objects.

> See: http://jsonapi.org/format/#document-resource-objects

format_json_api_response(*data*, *many*, ***kwargs*)
> Post-dump hook that formats serialized data as a top-level JSON API object.

> See: http://jsonapi.org/format/#document-top-level

generate_url(*link*, ***kwargs*)
> Generate URL with any kwargs interpolated.

get_resource_links(*item*)
> Hook for adding links to a resource object.

get_top_level_links(*data*, *many*)
> Hook for adding links to the root of the response data.

inflect(*text*)
> Inflect `text` if the `inflect` class Meta option is defined, otherwise do nothing.

on_bind_field(*field_name*, *field_obj*)
> Schema hook override. When binding fields, set `data_key` to the inflected form of field_name.

wrap_response(*data*, *many*)
> Wrap data and links according to the JSON API

class marshmallow_jsonapi.**SchemaOpts**(*meta*, **args*, ***kwargs*)

3.1.2 Fields

Includes all the fields classes from `marshmallow.fields` as well as fields for serializing JSON API-formatted hyperlinks.

class marshmallow_jsonapi.fields.**BaseRelationship**(**, load_default: Any = <marsh-mallow.missing>, missing: Any = <marshmallow.missing>, dump_default: Any = <marsh-mallow.missing>, default: Any = <marshmallow.missing>, data_key: Optional[str] = None, attribute: Optional[str] = None, validate: Optional[Union[Callable[[Any], Any], Iterable[Callable[[Any], Any]]]] = None, required: bool = False, allow_none: Optional[bool] = None, load_only: bool = False, dump_only: bool = False, er-ror_messages: Optional[Dict[str, str]] = None, metadata: Op-tional[Mapping[str, Any]] = None, **additional_metadata*)*

Base relationship field.

This is used by [`marshmallow_jsonapi.Schema`](#) to determine which fields should be formatted as rela-tionship objects.

See: http://jsonapi.org/format/#document-resource-object-relationships

class marshmallow_jsonapi.fields.**DocumentMeta**(***kwargs*)

Field which serializes to a "meta object" within a document's "top level".

Examples:

```python
from marshmallow_jsonapi import Schema, fields

class UserSchema(Schema):
    id = fields.String()
    metadata = fields.DocumentMeta()

    class Meta:
        type_ = 'product'
```

See: http://jsonapi.org/format/#document-meta

class marshmallow_jsonapi.fields.**Relationship**(*related_url='', related_url_kwargs=None, *, self_url='', self_url_kwargs=None, include_resource_linkage=False, schema=None, many=False, type_=None, id_field=None, **kwargs*)

Framework-independent field which serializes to a "relationship object".

See: http://jsonapi.org/format/#document-resource-object-relationships

Examples:

```python
author = Relationship(
    related_url='/authors/{author_id}',
```

```
        related_url_kwargs={'author_id': '<author.id>'},
    )

    comments = Relationship(
        related_url='/posts/{post_id}/comments/',
        related_url_kwargs={'post_id': '<id>'},
        many=True, include_resource_linkage=True,
        type_='comments'
    )
```

This field is read-only by default.

> **Parameters**
>
> - **related_url** (*str*) – Format string for related resource links.
>
> - **related_url_kwargs** (*dict*) – Replacement fields for related_url. String arguments enclosed in < > will be interpreted as attributes to pull from the target object.
>
> - **self_url** (*str*) – Format string for self relationship links.
>
> - **self_url_kwargs** (*dict*) – Replacement fields for self_url. String arguments enclosed in < > will be interpreted as attributes to pull from the target object.
>
> - **include_resource_linkage** (*bool*) – Whether to include a resource linkage (http://jsonapi.org/format/#document-resource-object-linkage) in the serialized result.
>
> - **schema** (*marshmallow_jsonapi.Schema*) – The schema to render the included data with.
>
> - **many** (*bool*) – Whether the relationship represents a many-to-one or many-to-many relationship. Only affects serialization of the resource linkage.
>
> - **type** (*str*) – The type of resource.
>
> - **id_field** (*str*) – Attribute name to pull ids from if a resource linkage is included.

deserialize(*value*, *attr=None*, *data=None*, ***kwargs*)
    Deserialize value.

> **Raises ValidationError** – If the value is not type dict, if the value does not contain a data key, and if the value is required but unspecified.

extract_value(*data*)
    Extract the id key and validate the request structure.

serialize(*attr*, *obj*, *accessor=None*)
    Pulls the value for the given key from the object, applies the field's formatting and returns the result.

> **Parameters**
>
> - **attr** – The attribute/key to get from the object.
>
> - **obj** – The object to access the attribute/key from.
>
> - **accessor** – Function used to access values from obj.
>
> - **kwargs** – Field-specific keyword arguments.

class marshmallow_jsonapi.fields.**ResourceMeta**(***kwargs*)
    Field which serializes to a "meta object" within a "resource object".

    Examples:

```python
from marshmallow_jsonapi import Schema, fields


class UserSchema(Schema):
    id = fields.String()
    meta_resource = fields.ResourceMeta()

    class Meta:
        type_ = 'product'
```

See: http://jsonapi.org/format/#document-resource-objects

3.1.3 Flask

Flask integration that avoids the need to hard-code URLs for links.

This includes a Flask-specific schema with custom Meta options and a relationship field for linking to related resources.

class marshmallow_jsonapi.flask.**Relationship**(*related_view=None*, *related_view_kwargs=None*, ***, *self_view=None*, *self_view_kwargs=None*, ***kwargs*)

Field which serializes to a "relationship object" with a "related resource link".

See: http://jsonapi.org/format/#document-resource-object-relationships

Examples:

```python
author = Relationship(
    related_view='author_detail',
    related_view_kwargs={'author_id': '<author.id>'},
)

comments = Relationship(
    related_view='posts_comments',
    related_view_kwargs={'post_id': '<id>'},
    many=True, include_resource_linkage=True,
    type_='comments'
)
```

This field is read-only by default.

> **Parameters**
>
> - **related_view** (*str*) – View name for related resource link.
> - **related_view_kwargs** (*dict*) – Path kwargs fields for related_view. String arguments enclosed in < > will be interpreted as attributes to pull from the target object.
> - **self_view** (*str*) – View name for self relationship link.
> - **self_view_kwargs** (*dict*) – Path kwargs for self_view. String arguments enclosed in < > will be interpreted as attributes to pull from the target object.
> - ****kwargs** – Same keyword arguments as *marshmallow_jsonapi.fields.Relationship*.

class marshmallow_jsonapi.flask.**Schema**(**args*, ***kwargs*)

A Flask specific schema that resolves self URLs from view names.

class Meta
Options object that takes the same options as `marshmallow-jsonapi.Schema`, but instead of `self_url`, `self_url_kwargs` and `self_url_many` has the following options to resolve the URLs from Flask views:

- `self_view` - View name to resolve the self URL link from.

- `self_view_kwargs` - Replacement fields for `self_view`. String attributes enclosed in `< >` will be interpreted as attributes to pull from the schema data.

- `self_view_many` - View name to resolve the self URL link when a collection of resources is returned.

self_url = None

self_url_kwargs = None

self_url_many = None

OPTIONS_CLASS
alias of *marshmallow_jsonapi.flask.SchemaOpts*

generate_url(*view_name*, ***kwargs*)
Generate URL with any kwargs interpolated.

class `marshmallow_jsonapi.flask.`**SchemaOpts**(*meta*, **args*, ***kwargs*)
Options to use Flask view names instead of hard coding URLs.

3.1.4 Exceptions

Exception classes.

exception `marshmallow_jsonapi.exceptions.`**IncorrectTypeError**(*message=None*, *actual=None*, *expected=None*)

Raised when client provides an invalid `type` in a request.

property messages
JSON API-formatted error representation.

exception `marshmallow_jsonapi.exceptions.`**JSONAPIError**
Base class for all exceptions in this package.

3.1.5 Utilities

Utility functions.

This module should be considered private API.

`marshmallow_jsonapi.utils.`**resolve_params**(*obj*, *params*, *default=<marshmallow.missing>*)
Given a dictionary of keyword arguments, return the same dictionary except with values enclosed in `< >` resolved to attributes on `obj`.

`marshmallow_jsonapi.utils.`**tpl**(*val*)
Return value within `< >` if possible, else return `None`.

PROJECT INFO

4.1 Changelog

4.1.1 0.24.0 (2020-12-27)

Deprecations/Removals:

- Drop support for marshmallow 2, which is now EOL ([#332](#)).

Bug fixes:

- Fix behavior when serializing `None` ([#302](#)). Thanks [@mahenzon](#).

Other changes:

- Test against Python 3.8 and 3.9 ([#332](#)).

4.1.2 0.23.2 (2020-07-20)

Bug fixes:

- Import from `collections.abc` for forward-compatibility with Python 3.10 ([#318](#)). Thanks [@tirkarthi](#).

4.1.3 0.23.1 (2020-03-22)

Bug fixes:

- Fix nested fields validation error formatting ([#120](#)). Thanks [@mahenzon](#) and [@debonzi](#) for the PRs.

4.1.4 0.23.0 (2020-02-02)

- Improve performance of link generation from `Relationship` ([#277](#)). Thanks [@iamareebjamal](#) for reporting and fixing.

4.1.5 0.22.0 (2019-09-15)

Deprecation/Removals:

- Drop support for Python 2.7 and 3.5. Only Python>=3.6 is supported (#251).
- Drop support for marshmallow 3 pre-releases. Only stable versions >=2.15.2 are supported.
- Remove `fields.Meta`.

Bug fixes:

- Address `DeprecationWarning` raised by `Field.fail` on marshmallow 3.

4.1.6 0.21.2 (2019-07-01)

Bug fixes:

- marshmallow 3.0.0rc7 compatibility (#233).

Other changes:

- Format with pyupgrade and black (#235).
- Switch to Azure Pipelines for CI (#234).

4.1.7 0.21.1 (2019-05-05)

Bug fixes:

- marshmallow 3.0.0rc6 cmpatibility (#221).

4.1.8 0.21.0 (2018-12-16)

Bug fixes:

- *Backwards-incompatible*: Revert URL quoting introduced in 0.20.2 (#184). If you need quoting, override
  `Schema.generate_url`.

```
from marshmallow_jsonapi import Schema
from werkzeug.urls import url_fix


class MySchema(Schema):
    def generate_url(self, link, **kwargs):
        url = super().generate_url(link, **kwargs)
        return url_fix(url)
```

Thanks @kgutwin for reporting the issue.

- Fix `Relationship` deserialization behavior when `required=False` (#177). Thanks @aberres for report-
  ing and @scottwernervt for the fix.

Other changes:

- Test against Python 3.7.

4.1.9 0.20.5 (2018-10-27)

Bug fixes:

- Fix deserializing `id` field to non-string types (#179). Thanks @aberres for the catch and patch.

4.1.10 0.20.4 (2018-10-04)

Bug fixes:

- Fix bug where multi-level nested relationships would not be properly deserialized (#127). Thanks @ww3pl for the catch and patch.

4.1.11 0.20.3 (2018-09-13)

Bug fixes:

- Fix missing load validation when data is not a collection but many=True (#161). Thanks @grantHarris.

4.1.12 0.20.2 (2018-08-15)

Bug fixes:

- Fix issues where generated URLs are unquoted (#147). Thanks @grantHarris.

Other changes:

- Fix tests against marshmallow 3.0.0b13.

4.1.13 0.20.1 (2018-07-15)

Bug fixes:

- Fix deserializing `missing` with a `Relationship` field (#130). Thanks @kumy for the catch and patch.

4.1.14 0.20.0 (2018-06-10)

Bug fixes:

- Fix serialization of `id` for `Relationship` fields when `attribute` is set (#69). Thanks @jordal for reporting and thanks @scottwernervt for the fix.

Note: The above fix could break some code that set `Relationship.id_field` before instantiating it. Set `Relationship.default_id_field` instead.

```
# before
fields.Relationship.id_field = "item_id"

# after
fields.Relationship.default_id_field = "item_id"
```

Support:

- Test refactoring and various doc improvements (#63, #86, #121# and #122). Thanks @scottwernervt.

4.1.15 0.19.0 (2018-05-27)

Features:

- Schemas passed to `fields.Relationship` will inherit context from the parent schema (#84). Thanks @asteinlein and @scottwernervt for the PRs.

4.1.16 0.18.0 (2018-05-19)

Features:

- Add `fields.ResourceMeta` for serializing a resource-level meta object (#107). Thanks @scottwernervt.

Other changes:

- *Backwards-incompatible*: Drop official support for Python 3.4.

4.1.17 0.17.0 (2018-04-29)

Features:

- Add support for marshmallow 3 (#97). Thanks @rockmnew.
- Thanks @mdodsworth for helping with #101.
- Move meta information object to document top level (#95). Thanks @scottwernervt.

4.1.18 0.16.0 (2017-11-08)

Features:

- Add support for exluding or including nested fields on relationships (#94). Thanks @scottwernervt for the PR.

Other changes:

- *Backwards-incompatible*: Drop support for marshmallow<2.8.0

4.1.19 0.15.1 (2017-08-23)

Bug fixes:

- Fix pointer for `id` in error objects (#90). Thanks @rgant for the catch and patch.

4.1.20 0.15.0 (2017-06-27)

Features:

- `Relationship` field supports deserializing included data (#83). Thanks @anuragagarwal561994 for the suggestion and thanks @asteinlein for the PR.

4.1.21 0.14.0 (2017-04-30)

Features:

- `Relationship` respects its passed `Schema's get_attribute` method when getting the `id` field for resource linkages (#80). Thanks @scmmmh for the PR.

4.1.22 0.13.0 (2017-04-18)

Features:

- Add support for including deeply nested relationships in compount documents (#61). Thanks @mrhanky17 for the PR.

4.1.23 0.12.0 (2017-04-16)

Features:

- Use default attribute value instead of raising exception if relationship is `None` on `Relationship` field (#75). Thanks @akira-dev.

4.1.24 0.11.1 (2017-04-06)

Bug fixes:

- Fix formatting JSON pointer when serializing an invalid object at index 0 (#77). Thanks @danpoland for the catch and patch.

4.1.25 0.11.0 (2017-03-12)

Bug fixes:

- Fix compatibility with marshmallow 3.x.

Other changes:

- *Backwards-incompatible*: Remove unused `utils.get_value_or_raise` function.

4.1.26 0.10.2 (2017-03-08)

Bug fixes:

- Fix format of error object returned when `data` key is not included in input (#66). Thanks @RazerM.

- Fix serializing compound documents when `Relationship` is passed a schema class and `many=True` (#67). Thanks @danpoland for the catch and patch.

4.1.27 0.10.1 (2017-02-05)

Bug fixes:

- Serialize `None` and empty lists (`[]`) to valid JSON-API objects (#58). Thanks @rgant for reporting and sending a PR.

4.1.28 0.10.0 (2017-01-05)

Features:

- Add `fields.Meta` for (de)serializing `meta` data on resource objects (#28). Thanks @rubdos for the suggestion and initial work. Thanks @RazerM for the PR.

Other changes:

- Test against Python 3.6.

4.1.29 0.9.0 (2016-10-08)

Features:

- Add Flask-specific schema with class Meta options for self link generation: `self_view`, `self_view_kwargs`, and `self_view_many` (#51). Thanks @asteinlein.

Bug fixes:

- Fix formatting of validation error messages on newer versions of marshmallow.

Other changes:

- Drop official support for Python 3.3.

4.1.30 0.8.0 (2016-06-20)

Features:

- Add support for compound documents (#11). Thanks @Tim-Erwin and @woodb for implementing this.
- *Backwards-incompatible*: Remove `include_data` parameter from `Relationship`. Use `include_resource_linkage` instead.

4.1.31 0.7.1 (2016-05-08)

Bug fixes:

- Format correction for error objects (#47). Thanks @ZeeD26 for the PR.

4.1.32 0.7.0 (2016-04-03)

Features:

- Correctly format `messages` attribute of `ValidationError` raised when `type` key is missing in input (#43). Thanks @ZeeD26 for the catch and patch.

- JSON pointers for error objects for relationships will point to the `data` key (#41). Thanks @cmanallen for the PR.

4.1.33 0.6.0 (2016-03-24)

Features:

- `Relationship` deserialization improvements: properly validate to-one and to-many relatinoships and validate the presense of the `data` key (#37). Thanks @cmanallen for the PR.

- `attributes` is no longer a required key in the `data` object (#39, #42). Thanks @ZeeD26 for reporting and @cmanallen for the PR.

- Added `id` serialization (#39). Thanks again @cmanallen.

4.1.34 0.5.0 (2016-02-08)

Features:

- Add relationship deserialization (#15).

- Allow serialization of foreign key attributes (#32).

- Relationship IDs serialize to strings, as is required by JSON-API (#31).

- `Relationship` field respects `dump_to` parameter (#33).

Thanks @cmanallen for all of these changes.

Other changes:

- The minimum supported marshmallow version is 2.3.0.

4.1.35 0.4.2 (2015-12-21)

Bug fixes:

- Relationship names are inflected when appropriate (#22). Thanks @angelosarto for reporting.

4.1.36 0.4.1 (2015-12-19)

Bug fixes:

- Fix serializing null and empty relationships with `flask.Relationship` (#24). Thanks @floqqi for the catch and patch.

4.1.37 0.4.0 (2015-12-06)

- Correctly serialize null and empty relationships (#10). Thanks @jo-tham for the PR.
- Add `self_url`, `self_url_kwargs`, and `self_url_many` class Meta options for adding `self` links. Thanks @asteinlein for the PR.

4.1.38 0.3.0 (2015-10-18)

- *Backwards-incompatible*: Replace `HyperlinkRelated` with `Relationship` field. Supports related links (`related`), relationship links (`self`), and resource linkages.
- *Backwards-incompatible*: Validate and deserialize JSON API-formatted request payloads.
- Fix error formatting when `many=True`.
- Fix error formatting in strict mode.

4.1.39 0.2.2 (2015-09-26)

- Fix for marshmallow 2.0.0 compat.

4.1.40 0.2.1 (2015-09-16)

- Compatibility with marshmallow>=2.0.0rc2.

4.1.41 0.2.0 (2015-09-13)

Features:

- Add framework-independent `HyperlinkRelated` field.
- Support inflection of attribute names via the `inflect` class Meta option.

Bug fixes:

- Fix for making `HyperlinkRelated` read-only by defualt.

Support:

- Docs updates.
- Tested on Python 3.5.

4.1.42 0.1.0 (2015-09-12)

- First PyPI release.
- Include Schema that serializes objects to resource objects.
- Flask-compatible HyperlinkRelate field for serializing relationships.
- Errors are formatted as JSON API errror objects.

4.2 Authors

4.2.1 Lead

- Steven Loria @sloria

4.2.2 Contributors (chronological)

- Jotham Apaloo @jo-tham
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4.3 Contributing Guidelines

4.3.1 Questions, Feature Requests, Bug Reports, and Feedback. . .

. . . should all be reported on the Github Issue Tracker .

4.3.2 Setting Up for Local Development

1. Fork marshmallow-jsonapi on Github.

```
$ git clone https://github.com/marshmallow-code/marshmallow-jsonapi.git
$ cd marshmallow-jsonapi
```

2. Install development requirements. **It is highly recommended that you use a virtualenv.** Use the following command to install an editable version of marshmallow-jsonapi along with its development requirements.

```
# After activating your virtualenv
$ pip install -e '.[dev]'
```

3. Install the pre-commit hooks, which will format and lint your git staged files.

```
# The pre-commit CLI was installed above
$ pre-commit install
```

4.3.3 Git Branch Structure

Marshmallow abides by the following branching model:

dev Current development branch. **New features should branch off here**.

X.Y-line Maintenance branch for release `X.Y`. **Bug fixes should be sent to the most recent release branch.** The maintainer will forward-port the fix to `dev`. Note: exceptions may be made for bug fixes that introduce large code changes.

Always make a new branch for your work, no matter how small. Also, **do not put unrelated changes in the same branch or pull request**. This makes it more difficult to merge your changes.

4.3.4 Pull Requests

1. Create a new local branch.

```
$ git checkout -b name-of-feature dev
```

2. Commit your changes. Write good commit messages.

```
$ git commit -m "Detailed commit message"
$ git push origin name-of-feature
```

3. Before submitting a pull request, check the following:

   • If the pull request adds functionality, it is tested and the docs are updated.

   • You've added yourself to `AUTHORS.rst`.

4. Submit a pull request to `marshmallow-code:dev` or the appropriate maintenance branch. The CI build must be passing before your pull request is merged.

4.3.5 Running tests

To run all To run all tests:

```
$ pytest
```

To run syntax checks:

```
$ tox -e lint
```

(Optional) To run tests in all supported Python versions in their own virtual environments (must have each interpreter installed):

```
$ tox
```

4.3.6 Documentation

Contributions to the documentation are welcome. Documentation is written in reStructuredText (rST). A quick rST reference can be found here. Builds are powered by Sphinx.

To build the docs in "watch" mode:

```
$ tox -e watch-docs
```

Changes in the `docs/` directory will automatically trigger a rebuild.

4.4 License

```
Copyright 2015-2020 Steven Loria and contributors

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```

LINKS

- marshmallow-jsonapi @ GitHub
- marshmallow-jsonapi @ PyPI
- Issue Tracker

PYTHON MODULE INDEX

m